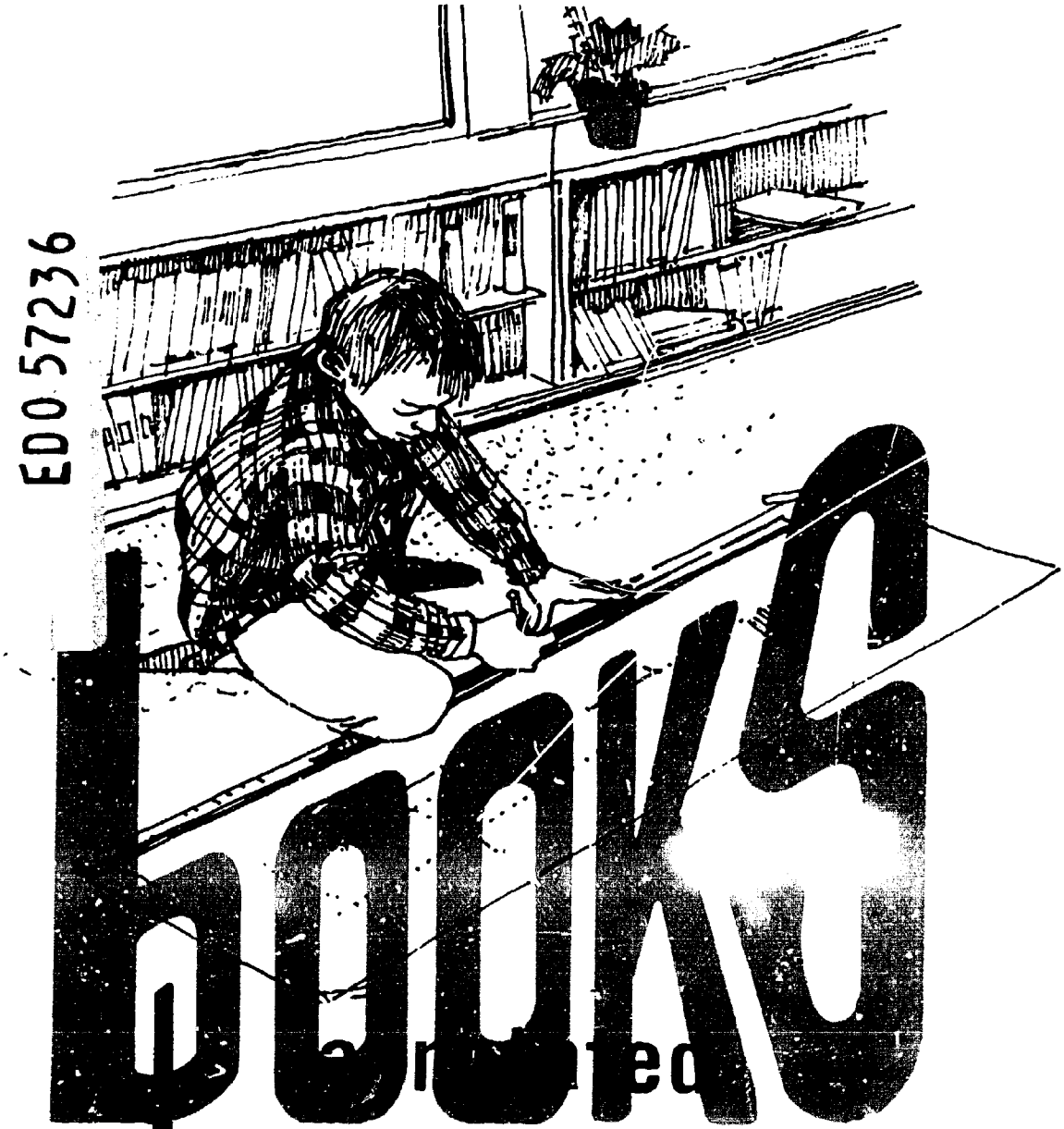
DOCUMENT RESUME

ED 057 236 VT 014 357

AUTHOR	Stunard, E. Arthur, Ed.
TITLE	"Books" Annotated by American Council for Elementary School Industrial Arts.
INSTITUTION	American Council for Elementary School Industrial Arts, Washington, D.C.
PUB DATE	Mar 71
NOTE	208p.
AVAILABLE FROM	American Industrial Arts Association, 1201 Sixteenth Street, N.W., Washington, D.C. 20036 (Stock no. 641-21338, $2.00)
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	*Annotated Bibliographies; *Books; Communications; Construction (Process); *Elementary Grades; Graphic Arts; *Industrial Arts; Industry; Manufacturing; Science Activities; Transportation

ABSTRACT

Prepared by the American Council for Elementary School Industrial Arts, (ACESIA), this annotated bibliography of books is a result of their commitment to publish materials that might be useful to the profession. For use in elementary school industrial arts activities, this list was compiled over a period of years with the help of many colleagues. The council is attempting to define, stimulate, and strive for the ideal form of industrial arts education in the elementary grades. The contents of this publication are divided into 54 areas. Samples are: (1) Automation, (2) Communication, (3) Electricity, (4) Glass, (5) Industry, (6) Magnets, (7) Plastics, (8) Sound, (9) Time and Clocks, (10) Wheels, and (11) Transportation. Each item is recommended for use at primary, intermediate, upper grades, and teacher reference level. Data regarding membership in ACESIA are given. (GEB)



books by

american council for

elementary school industrial arts

"BOOKS"

annotated by

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ACESIA
is a council of the
American Industrial Arts Association
1201 Sixteenth Street, NW
Washington, DC 20036

1971

The American Council for Elementary School Industrial Arts is attempting to define, stimulate,and strive for the ideal form of industrial arts education in the elementary school. In order to accomplish this, the organization is willing to enlist and coordinate the efforts of all people contributing to the development of such programs.

This annotated bibliography is a direct result of the commitment of A.C.E.S.I.A. to publish materials that might prove useful to the profession of education, with special reference to industrial arts activities in elementary grades.

This list of books was developed over a period of years with the help of many fine colleagues, and most certainly would never have become a reality without their efforts. As many lists, this one is by no means complete, nor will it ever be unless each person using this booklet adds his own references, and is willing to communicate his thoughts to the council. In the interest of a revised bibliography, please direct any other or new titles relevant to this area of education to the American Council for Elementary School Industrial Arts.

E. Arthur Stunard

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CONTENTS

DEFINITION OF TERMS

The following terms have been used to help in deciding who might best utilize each book listed in this bibliography. The age level judgment is obviously not absolute, and should only be thought of as a guide.

Primary - Grades K, 1, and 2

Intermediate - Grades 3 and 4

Upper - Grades 5 and 6

Teacher Reference - Thought generally to be most useful to the adult teacher.

In that each individual school situation would be different, the child, teacher, and librarian should ultimately make the final decision as to book selection and use.

AIRPLANES

Agle, Nan. Three Boys and a Helicopter. New York: Charles Scribner's Sons, 1958. 122pp.

A fictional story related to interests of adventuresome boys who became involved in doing research for construction of their own helicopter. The enthusiasm for making a vehicle that flies, portrays the interest of doing it yourself The boys experience going to the library to find out about helicopters, the terms explaining the function of the parts, and the materials used for the different parts.

Intermediate

Brooks, Walter R. Freddy the Pilot. New York: Alfred A. Knopf, 1952. 247 pp.

Enjoyable story of Freddy the pig and how he uprouted a trouble maker of Mr. Condiments Circus. Except for three. all of the speaking characters are animals. There are very few pictures. There is no technological value directly, but possible motivating value.

Primary

Bryan, Leslie. Fundamentals of Aviation & Space Technology. Illinois: Institute of Aviation, 1962. 155 pp.

This is an informative text on the history and theory of flight, aircraft engines and instruments, air navigation, meteorology, and space exploration.

Teacher Reference

Buehr, Walter. Cargoes in the Sky. New York: G. P. Putnam's Sons, 1958. 61pp.

This book deals with air cargo from 1910 to the Berlin airlift and prospects for the future.

Good illustrations and good anecdotes of real experiences.

Intermediate

Davis, Kenneth. Flight to Glory. New York: Garden City, 1960. 56pp.

This is a story about Charles A. Lindberg and the Spirit of St. Louis. Large illustrations of the plane and parachutes make the exciting story of his flight across the ocean a great story.

Upper

Elting, Mary. Aircraft at Work. New York: Harvey House, 1964. 93pp.

This is a story of airplanes and the men who fly them. You will meet pilots who dust crops, plant forests, put out fires, and even carry zoo animals. Well illustrated.

Upper

Feravolo, Rocco. Junior Science Book of Flying. Illinois: Garrard, 1960. 64pp.

The author has written a story about the science of flying that is understandable for all. Well illustrated.

Intermediate

Gardner, Jeanne. Sky Pioneers. New York: Harcourt, Brace, & World, 1963. 62pp.

Throughout their boyhood, Orville and Wilber Wright experimented with tools and machines. This book tells how the boys grew to contribute many ideas to the age of flight. They put a curve in their kite, built an improved printing press, and discovered about wind resistance's affect on speed.

Intermediate

Huntington, Harriet. Cargoes. New York: Doubleday, 1964. 96pp.

This book goes behind the scenes to see the complex machinery and vast manpower needed to load and unload thousands of tons of cargo each day.

Intermediate

McFarland, Kenton. Airplanes: How They Work. New York: Putnam, 1966. 95pp.

This book gives the answers to how and why an airplane works. It not only covers the basic principles of flight but also explains the workings of the many systems and sub-systems of an airplane in clear, understandable language.

Upper

Parlin, John. Amelia Earhart. Illinois: Garrard, 1962. 80pp.

Amelia Earhart loved exciting things when she was a child, and was determined to fly a plane. She became the first woman to fly the Atlantic Ocean and her attempt to fly around the world was a challenge to fliers everywhere.

Intermediate

Tatham, Campbell. The First Book of Flying. New York: Watts, 1948.

Simple story and text are combined to tell about airplanes and the people who fly them.

Intermediate

AUDIO-VISUAL EDUCATION

Dale, Edgar. Audio-Visual Methods in Teaching. New York: The Dryden Press, Inc., 1946. 545pp.

An audio-visual education book loaded with activities that could be used in the elementary school classroom. Especially of interest to the elementary teacher would be the chapters on (a) Contrived Experiences (Models, Mockups, Objects, Specimens); (b) Dramatized Experiences (Plays, Puppetry, Socio-Drama, Role-Playing); (c) exhibits (School-made displays, Bulletin Boards, Posters). Each of these chapters is valuable in that it suggests ways of getting children involved in real learning situations.

Teacher Reference

Morlan, John E., Preparation of Inexpensive Teaching Materials. San Francisco: Chandler Publishing Company, 1963. 103pp.

Basically, this is an audio visual textbook geared for adult readers; however, the chapters on "Dramatization and Story-telling Device" and "Maps, Models and Mockups" could suggest many industrial arts activities for the elementary school teacher. Each device mentioned includes a list of materials, possible sources of supply for unusual items, equipment and a procedure for construction. Many illustrations are used throughout the writing.

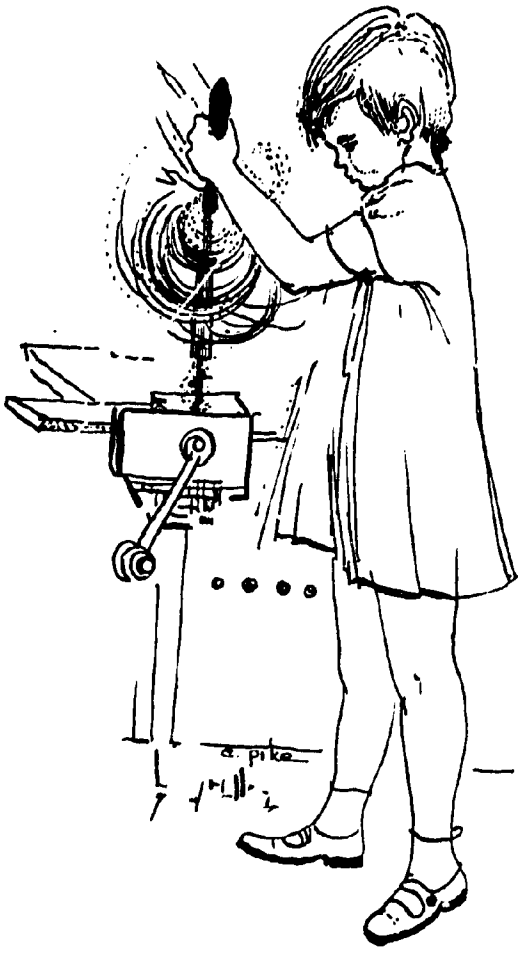
Teacher Reference

Silverstone, David M. and Leonie Brandon. Instructional Materials Primer: Use and Preparation. Cambridge: Educators Publishing Service, 1962. 151pp.

An audio-visual textbook with chapter 3 being devoted to some do-it-yourself projects that could be adopted by the elementary school teacher as some industrial arts activities

in her classroom. Such projects as a magnetic board, electric panel board, diorama and photograph are discussed, giving a definition and construction procedures for each.

Teacher Reference



AUTOMATION

Arnold, Pauline. The Automation Age. New York: Holiday House, 1963. 193pp.

A clear, non-technical explanation of the most rapidly changing aspect of modern life. It discusses present and future effects of automation on society, especially as it relates to young people.

Upper

Bluemle, Andrew. Automation. Cleveland and New York: World Publishing Company, 1963. 138pp.

The author traces the evolution of the three components of automation today--mechanical handling devices, "feedback" systems, and electronic computers. He explains the principles and operation of digital and analog computers, binary arithmetic, and programming. Automation is shown at work in steel, oil, chemical, and power plants, in the machine shop, on the assembly line, in banks, in control centers of transportation networks, in telephone switching systems, in retailing, and in the post office. A final section places automation in the larger framework of labor problems, leisure time, and education. Illustrated with photographs and diagrams.

Upper

Halacy, Jr., D. S. The Robots Are Here! New York: W. W. Norton & Company, 1965. 117pp.

The story of the development of machines that can "learn" to perform complicated tasks and "remember" how to repeat actions over and over. The inexpensive and accurate jobs performed by robots displace workers, and industries have to retrain men to handle different jobs.

The author describes the way in which robots work and explains the need for human brain power to make machines useful and to develop them further.

Intermediate

Hirsch, S. This Is Automation. New York: Viking Press, 1964. 128pp.

This book explains automation--what it is, how it evolved as a natural outgrowth of the Industrial Revolution, the role of the computer and how it works--and tells of the new skills needed to prepare for the changes automation is bringing in the way people live and work.

Intermediate

Lewis, Alfred. The New World of Computers. New York: Dodd, Mead, & Company, 1965. 77pp.

Tells how technological revolution got started and where it is headed; relates how computers predict elections, prepare telephone books and school report cards, route checks through banks, enables us to dial long distance, and control the flight of spaceships.

Points out the challenge that lies ahead for young people, and their needs for an education that will help them to find specialized jobs in the coming age of automation.

Illustrated with photographs.

Intermediate

Seldin, Joel. Automation. New York: Coward - McCann. 1965. 118pp.

Automation is not only a challenge to the machine, but to people. The author sets forth automations' assets as well as its threats.

Upper

AUTOMOBILES

Alexander, Anne. ABC of Cars and Trucks. New York: Doubleday, 1956.

An easy to read book with full page pictures that use each letter of the alphabet to mention a type of motor vehicle.

Primary

Bowen, Robert Sidney. Hot Rod Patrol. New York: Criterion Books, 1966. 172pp.

An enjoyable story about a town's hot rod club, their search for a racing strip and their contribution to the community. It is a realistic adventure, which uses typical terminology. The book shows a conflict between rich and average wealth, a girl versus two boys, a good citizen versus poor citizenship, and boy accused wrongly of a hit and run accident.

There are no pictures and thus does not spoil the rich imagination involved. Good to interest children in automobiles, promote good citizenship, and provide enjoyable reading.

Intermediate

Braverman, Robert and Bill Neumann, Slot Car Racing. New York: G. P. Putnam's Sons, 1966. 128pp.

A well illustrated book, describing in detail the recently developed hobby of slot car racing. Good for anyone interested in developing his own interests from "Scratch-building to Slot Racing Jargon." Last chapter lists manufacturers of equipment.

Intermediate

Cooke, David C. How Automobiles Are Made. New York: Dodd, 1957. 64pp.

This book shows automobile production from the engine's design to the dealer's showroom.

Intermediate

Corbett, Scott. What Makes A Car Go? New York: Little Brown & Company, 1963. 43pp.

This is a book of easily explained facts that tells you why your car works.

Primary

Crouse, William. Automotive Mechanics. New York: McGraw-Hill, 1956. 726pp.

The author gives a complete course on the subject of automobile mechanics that covers theory of operation, maintenance, repair, disassembly, and adjustments of components.

Teacher Reference

Froman, Robert. Faster and Faster. New York: Viking Press, 1965. 43pp.

This book is about speed in its many forms from turtles to jets.

Primary

Gault, William Campbell. Sunday's Dust. New York: E. P. Dutton and Company, Inc., 1966. 159pp.

Story of two young men each meeting his own challenge on the race track.

Intermediate

Gilbert, Miriam. Henry Ford Maker of the Model T. Boston: Houghton Mifflin Company, 1962 190pp.

This is the biography of Henry Ford--emphasizing the childhood traits of character that led to his adult achievements. There are drawings on every three or four pages in two colors; the type is large. There are pictures of early models in the last section of the book, and a description of reasons leading to the assembly line.

Intermediate

Lenski, Lois. The Little Auto. London, New York, Toronto: Oxford University Press, 1934. 41pp.

A fiction about the automobile told in a primary text. A primary concept of tools and properties of materials that are part of an automobile.

Primary

Rachlis, Eugene. Early Automobiles. New York: Golden Press, 1966. 57pp.

This book describes the inventions which had to be perfected before any practical automobile could be considered--inventions such as the steam engine and the internal combustion machine. Problems which had to be solved before a satisfactory automobile could be made were how to start an engine, how to keep fuel coming to it, how to keep the engine from overheating, how to keep a steady engine speed while the wheels were turning at another speed, and how to stop the car. This book explains how these problems were solved and also gives diagrams of the solutions. There are pictures of some of the early models--the Apperson Jack Rabbit, the Columbia Electric, the Stanley Steamer, etc. The book contains a special chapter on Henry Ford.

Intermediate

Robbin, Irving. Great Cars of All Types. New York: Grasset & Dunlap, 1960. 209pp.

This work treats the advancement of cars from the wheel to the Corvette. Models are included: Daimler, Stanley Steamer, Peugeot, Oldsmobile, Ford Bugatti, Packard, Mercedes, Locomobile, Pierce-Arrow, Cadillac, Rolls-Royce, Alfa-Romeo, Mercer, Stutz, Bentley, Citroen, Duesenberg, Lincoln, MG, Chrysler, Cord, Jaguar, Ferrari, Jeep, V. W., Porsche, Corvette. There are pictures about every three pages. The book discusses technical advances made in each car without detailed description. Emphasis seems to be on speed.

Intermediate

Yerkow, Charles. Automobiles: How They Work. New York: Putnam, 1966. 96pp.

This book tells how a car works and includes automotive engineerings most recent advances. There is a section on safe driving.

Upper

BOATS

Colby, Carroll B. First Boat: How to Pick It and Use It for Fun Afloat. New York: Coward - McCann, 1956. 48pp.

Easy to understand drawings accompanied with a brief text, provide a practical guide for the beginner. Information on rowboats, canoes, sailboats and outboard motors is provided concerning their operation and safety.

Intermediate

Cooke, David. How Atomic Submarines Are Made. New York: Dodd, 1957. 64pp.

A concise text with ample photographs describes the building and launching of the world's first atomic submarine.

Upper

Elting, Mary. Ships At Work. New York: Harvey House, 1953. 91pp.

Many unusual ships that do specialized jobs are shown in action. The author describes the men, ships, work, and cargoes.

Intermediate

Fry, Christopher. The Boat That Mooed. New York: MacMillan Company, 1965. 28pp.

This is an unusual story of a boy who has nothing to do and no one to talk with except the pan in the kitchen because of the dense fog. His uncle does not say anything except "Good Morning", and "Good Night". He finds a girl whose father only sings. They keep their boats close together and talk to each other.

Perhaps neglected children could feel an identification; and many children imagine talking to swans and pans.

Primary

Gramalky, Hardie. Little Toot on the Thames. New York: Putnam, 1964. 88pp.

This story is about the adventures of a fun-loving tugboat on the Thames in London.

Primary

Latham, Jean. George W. Goethals. Illinois: Garrad, 1965. 80pp.

The story of a tamer of rivers and a great engineer. George Goethals built the Spokane River Bridge and then worked on the Panama Canal.

Primary

Lenski, Lois. The Little Sailboat. Henry Z. Walck, Incorporated, 1960. 44pp.

This is an informative and interesting story of Captain Small and his sailboat. Descriptions of what happens in the preparation, sailing, and stormy weather are told through the story. Pictures on every other page; large lettering. Technical terms are used and clearly understood.

Primary

Molarsky, Osmund. Piper: The Sailboat That Came Back. Connecticut: New York Graphic Society, 1965. 45pp.

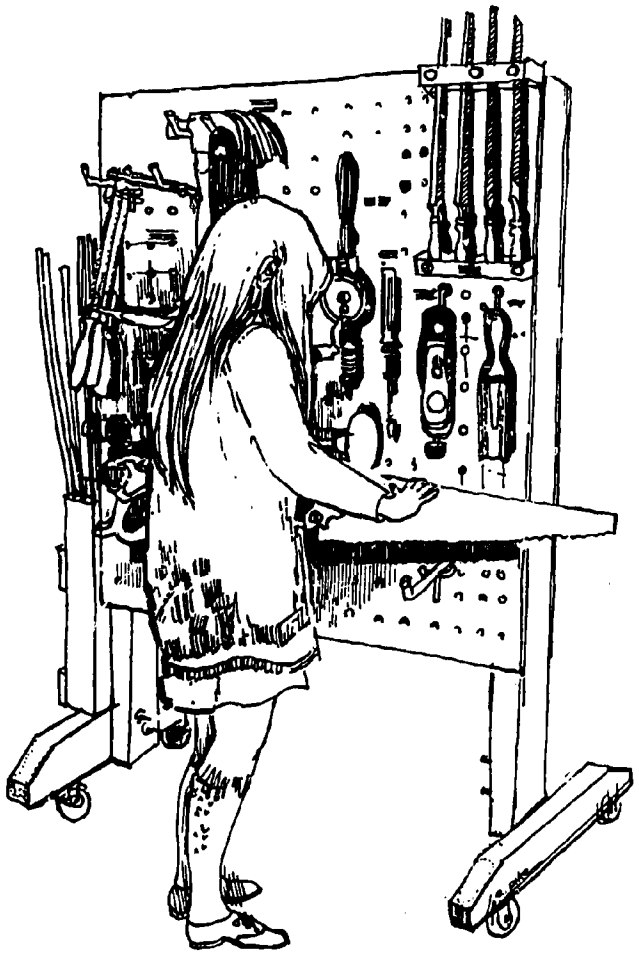
A story about a little sailboat and the fun he had with the family who owned him until the sailboat is sold. Piper sinks because of his new owners ' carelessness and is washed ashore many years later to find his friends again.

Primary

Zaffo, George. Big Book of Boats and Ships. New York: Grosset and Dunlap, 1951. 26pp.

Full page pictures help illustrate the simple descriptions of all kinds of boats and ships. There is a picture history of the evolution of boats and a key to flag and whistle signals.

Intermediate



BRIDGES

Bate, Norman. Who Built the Bridge? New York: Scribner, 1954.

This is a picture story of a mean river, an old bridge, and the building of a new bridge. Realistic pictures.

Primary

Carlisle, Norman. The True Book of Bridges. Chicago: Children's Press, 1965. 46pp.

In simple text with good illustrations, the author describes many of the most beautiful and interesting bridges in the world.

Primary

Chester, Michael. Let's Build a Suspension Bridge.

A very interesting book of useful arts in story form on how to build a suspension bridge. A brief history of the suspension bridge is given. The author explains the title of a Chief Engineer, and his specific duties and responsibilities with the aid of his many assistants. Well illustrated by Charles Dougherty.

Primary

Harrod, Kathryn. Master Bridge Builders. New York: Julian Messner, 1958. 189pp.

This is the story of the building of the Brooklyn Bridge.

Upper

CERAMICS

Barford, George. Clay in the Classroom. Massachusetts: Davis,1963. 118pp.

One purpose if this book is to dispel the mysteries which teachers may have about ceramics. Equipment, procedures, and methods have been adapted to the classroom situations. Most of the text is applicable to the elementary level, although some suggestions are suitable for working with older students in art classes.

Teacher Reference

Brennan, Thomas. Ceramics. Illinois: Goodheart-Wilcox, 1964. 96pp.

This book will acquaint you with the many terms, tools, and procedures used in working ceramics. Describes procedure of how to stack and fire ceramic pieces in the kiln.

Teacher Reference

Fisher, Leonard Everett. The Potters. New York: Franklin Watts, Inc., 1969.

An early history of potteries in America and how they worked.

Intermediate

Leeming, Joseph. Fun with Clay. New York: J. B. Lippincott Co., 1944. 96pp.

Good for elementary school use in that the text covers basic tools, methods,and complete directions for all kinds of modeling with either kiln-baked or self hardened clays. A brief discussion of decorating pottery with glaze and firing clay in the kiln.

Upper and/or Teacher Reference

Mitchell, Lane. Ceramics: Stone Age to Space Age. Washington, D. C.: National Science Teachers Association, 1963. 128pp.

The author investigated the origins of earthy materials and explains how the ceramic engineer processes and modifies these materials to make useful products.

Teacher Reference

Nelson, Glenn. Ceramics. New York: Holt, Rinehart, and Winston, 1966. 330pp.

This is an introduction to ceramics--its history, design, glazes, kilns, and methods. The book is good for beginners and advanced ceramic enthusiasts.

Teacher Reference

Olson, Delmar W. Pottery: Getting Started in Ceramics. Scranton: Laurel Publishers, 1953. 113pp.

A book on pottery that would be most useful to children in the upper elementary grades or above. It includes a brief history of pottery and discusses many of the important methods and techniques of hand pottery work, including slip casting, design, decoration and firing of clay.

Upper and/or Teacher Reference

Roy, Vincent. Ceramics. New York: McGraw-Hill, 1959. 272pp.

This book is written primarily for the beginning student of pottery The topics presented are in order of importance from the definition of ceramics in everyday life.

Teacher Reference

Thompson, Thomas E. Enameling on Copper and Other Metals. Highland Park, Illinois: Thomas C. Thompson Company, 1950. 42pp.

An inexpensive booklet that is especially written for the person interested in doing metal enameling but does not feel he has the knowledge or ability. Written in such easy to understand terms most readers would have little difficulty in following the text. Provides excellent background information and presents many helpful hints to successful enameling.

Teacher Reference

Wheeler, Ida W. Playing with Clay. New York: The Macmillan Co., 1935. 116pp.

Much information about clay, written for children in the form of a story. As the author relates the story of clay, many activities are suggested that could be carried out in the elementary classroom.

Upper

Zarchy, Harry. Ceramics. New York: Alfred A. Knopf, 1954. 171pp.

This book was written for young people to get them started in the area of ceramics. Begins with very basic information about clay and moves to most of the common methods of forming, modeling, glazing, and firing. There are many creative ideas and complete instructions on how to make the designated projects. The glossary of ceramic terms could be most helpful to the beginner.

Upper

CLOTHING

Jupo, Frank. Nothing to Wear but Clothes. New York: Aladdin Books, 1953. 47pp.

A fine picture storybook about the development of our clothing industry, written for intermediate elementary school children. The story begins with some early history of clothes and clothesmaking and brings the reader up to modern times in relating how fashions and needs are continually changing, and finally concluding with a thought-question of "what next?"

Intermediate

COLOR

Carter, Katherine. My Book of Color. Ottenheimer, 1961.

A picture book with the text illustrating the importance of color and color combinations. It begins with the sun's rays and ends with color television.

Primary

Freeman, Don. A Rainbow of My Own. New York: Viking Press, 1966. 30pp.

A little boy pretends that he has a rainbow to play with, and his imagination goes wild. Many excellent pictures.

Primary

Gottlieb, Suzanne. What is Red? New York: Lothrop, Lee and Shepard, 1961. 18pp.

Book very simply names the main colors and gives an illustrated example of each. Examples: Red is the color of apples, berries, fires, and a sunset.

Primary

Healey, Frederick. Light and Color. New York: Day, 1962. 48pp.

Tells where light comes from, how it works, and what it does. Includes experiments you can do yourself.

Primary

Johnson, Crockett. Harold and the Purple Crayon. Harper and Brothers, 1955. 30pp.

A delightful short story about a little boy named Harold who, by using his imagination and a purple crayon, is able to adventure outside his own domain. Good illustrations.

Primary

Johnson, Crockett. A Picture for Harold's Room. New York: Harper and Brothers, 1960. 64pp.

Harold discovers that his room needs a picture and so he starts his imaginary travels and adventures.

Primary

Lionni, Leo. Little Blue and Little Yellow. New York: McDowell, 1959. 36pp.

A storybook about a blue dot and yellow dot who play together. The story would delight 3 to 6 year olds. Each page has a colored dot and one sentence.

Primary

Neal, Charles. Exploring Light and Color. Chicago: Children's Press, 1964. 156pp.

The story of light and color is told with large color pictures and easy to read print. It discusses topics such as shadows, pinhole cameras, refraction and reflection of light, sources of light, the color wheel, color blindness,and lenses.

Intermediate

Purdy, Susan. If You Have a Yellow Lion. Philadelphia: J. B. Lippincott Company, 1966. 49pp.

Colorful, large print, one line to a page. This is written in poem form and each page illustrates and tells what happens when the primary colors and black and white are mixed. Good for color experimentation.

Primary

Rainwater, Janette. Vision: How, Why, and What We See. New York: Golden Press, 1962. 54pp.

The book explains the construction of the eye, vision tricks, color and seeing aids such as glasses, telescopes,

and microscopes.

Upper

Scott, Rochelle. Colors, Colors All Around. New York: Grosset and Dunlap, 1965. 42pp.

Simple poems tell stories of the colorful objects in the world. The colors are taken one at a time, and then are mixed to get new colors.

Primary

COMMUNICATION

Coggins, Jack. Flashes and Flags. New York: Dodd, Mead, and Company, 1963. 88pp.

An account of signals and signaling devices in everyday use - by ships, planes, trains, in sports, traffic, and weather warnings. Also a brief history of signaling. Colorful illustrations. Page of international code flags and pennants.

Intermediate

Krishef, Robert. Playback. Minneapolis: Lerner, 1962. 40pp.

This is a history of recording devices and their uses for man.

Primary/Intermediate

Laffin, John. Codes and Ciphers. New York: Abelard Schuman Limited, 1964. 152pp.

Written in a simple lively style and illustrated with good maps. This simple and comprehensive history of secret writing tells fascinating stories about the use of codes and ciphers from ancient to modern times.

Upper

Latham, Jean. Samuel F. B. Morse. Illinois: Garrod, 1961. 80pp.

Samuel Morse's childhood never would have suggested his final career as a famous inventor. This book concentrates on his invention of the telegraph.

Intermediate

Nelson, Mary E. My Book of Communication. Baltimore, Maryland: Ottenheimer Publishers Incorporated, 1961. 28pp.

This is the story of communication from cave man days to modern communication.

Primary

Posin, Daniel. What is Electronic Communication? New York: Benefic, 1961. 34pp.

The science and uses of electrons is explained in an easy to read text.

Primary

Wells, Robert. Messages, Men and Miles. New Jersey: Prentice-Hall, 1958. 120pp.

This is the story of how man taught himself to bring his thoughts to other men. It is a tale of how modern man communicates with his neighbors.

Upper

Yates, Raymond. The Boys' Book of Communication. New York: Harper, 1942. 144pp.

The author presents the basic principles of telegraphy and telephony. Instructions are included for making telegraph instruments.

Upper

CONSTRUCTION AND DRAWING

Association for Childhood Education. Make It For The Children. Prepared by Page Kirk from Materials Assembled and Evaluated by the A.C.E. Committee on Equipment and Supplies. Washington: Association for Childhood Education, 1948. 36pp.

A booklet with over thirty plans of toys and apparatus for young children. A general introduction to tools and materials is presented, along with complete drawings, bill of materials and dimensions for each item presented.

Teacher Reference

Barr, Donald. The How and Why Wonder Book of Building. New York: Whittlesey House. 1963. 156pp.

This book concerning structures around the world is a composite of science, biographies, and history.

Upper

Barr, George. Young Scientist Looks at Skyscrapers. New York: Whittlesey House, 1963. 156pp.

Traces each step in the construction process, from the digging of the foundation pit to the completed structure. Also included is information on building materials and machines; welders, riveters, steel erectors, and other men who do dangerous work. There are facts about building design, types of foundations, and zoning laws. Detailed drawings and simple experiments are offered.

Upper

Bate, Norman. Who Built the Highway? New York: Scribner, 1953.

An artistic presentation with text of big machines and how they build a highway.

Primary

Boy Scouts of America. Drafting. New Jersey: Boy Scouts of America, 1965. 37pp.

Discusses drafting tools, scale drawings, lettering, and careers in drafting.

Upper

Boy Scouts of America. Model Design and Building. New Jersey: Boy Scouts of America, 1964. 42pp.

Although we generally think of model building as a hobby, model construction is essential in many industries. Contents include choosing a model, using tools, and finishing your work.

Upper

Brown, Walter. Drafting. Chicago: Goodheart-Willcox, 1961. 112pp.

This book is designed to provide a broad experience in drafting and to enable one to develop the necessary skills to use drafting effectively.

Teacher Reference

Burton, Virginia. Mike Mulligan and His Steam Shovel. Boston: Houghton-Mifflin, 1939. 41pp.

This is the story of a man who is very faithful to his steam shovel, Mary Anne, and will not even desert her as the gas and diesel-motored shovels take over most of the business.

Primary

Colby, C. B. Earthmovers. New York: Coward-McCann, 1955. 48pp.

Examples of all the important types of big equipment used in digging, scraping, grading, rolling, and hauling are illustrated and discussed.

Intermediate

Cooper, Shriver. Drawing and Blueprint Reading. New York: McGraw-Hill, 1966, 360pp.

Author stresses the practicality of drawing as a meaningful communication. Elementary blueprint reading and simple sketching develop into industrial and electronic drawings at the end of the text.

Teacher Reference

Feirer, John. Drawing and Planning. Illinois: Bennett, 1963. 376pp.

The purpose of this book is to help young people learn how to make and use drawings. Shows how to sketch and draw for many industrial arts subjects.

Upper

Goodspeed, J. M. Let's Take a Trip to Watch a Building Go Up. New York: Putnam, 1959.

Author has presented a well illustrated text on tearing down the old and building the new to take its place.

Primary

Greenberg, Sylvia and Edith Raskin. Home-Made Zoo. New York: David McKay Company, 1952.

Presents material on various animals, the varieties, cage construction, breeding, etc.

Primary

Gringhus, Dirk. Big Mac. New York: MacMillan, 1959.

Story of a bridge being built so that men may travel quickly and safely across the straits of Mackinac in Michigan. It shows previous methods of travel as well as the bridge construction.

Intermediate

Harmon, Earl W., Introduction to Mechanical Drawing. Boston: Allyn and Bacon Inc., 1958. 79pp.

An excellent introduction to the tools and the basic kinds of drawings that are used in the drafting industry today, written in the form that children could understand. Could be used by upper elementary school children although probably intended for the junior high school level. Well illustrated, plus the use of colorful animated mechanical drawing tools makes the book more enjoyable for younger children.

Upper and/or Teacher Reference

Hughes, Toni, How to Make Shapes in Space. New York: E. P. Dutton & Company, Inc., 1955. 217pp.

An excellent book for the creative teacher who might be interested in an activity that is both fun and challenging. The author presents several ways of constructing, starting with plain white wrapping paper. Presents two as well as three-dimensional work. Emphasizes the use of many materials to create attractive designs. This approach to creative design could find its way into many areas of the elementary school curriculum.

Teacher Reference

Kay, J and C. T. White, Toys: Their Design and Construction. Peoria: The Manual Arts Press, 1947. 125pp.

Can be used as an idea book for the elementary teacher interested in having classes make interesting, well designed wooden toys. Although the toys are intended for nursery or kindergarten aged children, they would have to be made by an older group.

Teacher Reference

Leeming, Joseph, Fun with Wire. J. B. Lippincott Company, 1956. 96pp.

Book could be used by children as well as adults to suggest many possibilities of wire projects. A large percentage of the ideas presented can be made from wire coat hangers. Author discusses the fundamental tools and techniques in the first chapter and then moves quickly to the making of many household articles, jewelry, Christmas decorations, figurines, frames, and flowers. Activity possibilities are unlimited.

Upper and/or Teacher Reference

Liang, Yen., The Skyscraper. New York: Lippincott, 1958. 48pp.

An easy to read book of an overcrowded city that decides to start piling houses on top of each other so they have room for some trees. The people build a skyscraper and there are very large pictures of all the machinery used in its construction.

Primary

Lindstone, John., Building with Balsa Wood. New York: Van Nostrand, 1965. 62pp.

This book tells about balsa wood and then gives directions for building a plane, buildings, a rocket and a mask. The text is well illustrated with pictures of children working on the projects.

Upper

Neurath, Marie., Building Big Things. New York: Orthop, Lee and Shepard, 1958. 36pp.

Shows the young reader many different types of construction around the world such as buildings, bridges, and dams.

Primary

New York State Education Department. Let's Make It. Bulletin, Albany: Bureau of Elementary Curriculum Development, 1958. 168pp.

Publication dealing with many of the problems and procedures of beginning an activity program for the elementary school. This bulletin includes general philosophy of construction in the elementary grades, information about work areas, equipment, tools, materials and what skills and techniques are needed by the teacher. Illustrated.

Teacher Reference

Quinlan, Charles, Jr., Orthographic Projection Simplified, Bloomington, McKnight & Mcknight Publishing Company, 1960. 86pp.

An excellent book for the person interested in learning about "Orthographic Projection," or what is known as a three view working drawing. The author presents this subject in such simple form that even the person who knows nothing of this principle of drawing could easily grasp the concept of drawing a top, side, and front view of a three-dimensional object. The elementary teacher could find this technique useful in chalkboard illustration, such as project plans.

Teacher Reference

Riedman, Sarah., Let's Take a Trip to the Cement Plant. New York: Abelard-Schuman, 1959. 128pp.

Photographs illustrate the major steps in cement manufacture, and history of cement in various types of concrete construction.

Upper

Sibley Hi., 72 New Bird Houses You Can Make. Chicago: Goodheart-Wilcox, 1957. 80pp.

The author gives the dimensions of bird houses for different species. Excellent photographs and diagrams aid in the construction of the attractive homes.

Upper

Slobodkin, Louis., The First Book of Drawing. New York: Franklin Watts, Inc., 1958. 68pp.

A very basic book intended to instruct the beginner on the fundamentals of figure and animal drawing. Would be very useful to the intermediate or older elementary school child interested in being able to use drawing as another means of communication.

Intermediate

Van Doren, H. Industrial Design. New York: McGraw-Hill, 1954. 379pp.

This book is about the field of design as a career and illustrations of more advanced techniques are presented.

Teacher Reference

Weiss, Harvey. Clay, Wood, and Wire. New York: William R. Scott, Inc., 1956. 48pp.

An interesting and creative approach to working with clay, wood, and wire. This book has to do with sculpture and is filled with ideas on how to effectively manipulate these materials into many different objects. It presents at least fifty examples of fine sculpture done by artists and how the beginner could use these as models for beginning his own work. Upper elementary children or older would find this book most profitable.

Upper and/or Teacher Reference

EDUCATION

Beck, Robert H., (editor) The Three R's Plus. Minneapolis: University of Minnesota Press, 1956. 392pp.

A compilation of writings from many prominent people in the field of elementary education. Pages 245-253 are written by William J. Michaels, and are concerned with industrial arts at the elementary levels.

Teacher Reference

Boehmer, Susan E. and Chris Groneman., Handbook for Teachers. Austin: The Steck Company, 1946.

"Helpful in a study of some of the common tools and their uses--adapted to use in elementary grades."

Teacher Reference

Caswell, Hollis L. and Arthur W. Foshay., Education in the Elementary School. New York: American Book Company, 1957 430pp.

An elementary curriculum book with some specific references to an experience curriculum and the idea of integration as it should relate to the activity program. (pp. 250-256). The elementary school teacher will find this section helpful in establishing a philosophy for the activity program in her classroom.

Teacher Reference

Childe, Gordon., Man Makes Himself. New American Library of World Literature, New York: 1936. Revised in 1941, 1951. 192pp.

Short story of the origin and progress of man from earliest recorded history to modern times, including 19 major contributions through which man achieves mastery of his environment.

Teacher Reference

Division of Surveys and Field Services., Free and Inexpensive Learning Materials. Tennessee: Peabody College, 1966/67. 276pp.

Thousands of maps, posters, pictures, charts, pamphlets, and other educational materials are listed in subject order. They can all be ordered for very little or no money.

Teacher Reference

Gold, Milton J., Working to Learn. New York: Bureau of Publications, Teachers College, Columbia University, 1951. 192pp.

A study in the concepts of occupational education as based on the work accomplished by John Dewey and others. The author follows this basic philosophy from functionalism in the elementary school to the role of the secondary school. Chapter 2 specifically deals with the elementary school and the underlying philosophy of the activity movement and concerns for "experience education."

Teacher Reference

Herrick, Virgil E. and others, The Elementary School. Englewood Cliffs: Prentice-Hall, Inc., 1956. 474pp.

Chapter 12 deals with "The Arts in the Elementary School" including industrial arts activities, through implication, in such forms as using simple woodworking tools construction and clay work, placing the responsibility for use and instruction of these integrated activities on the classroom teacher rather than on the specialist.

Teacher Reference

Hildreth, Gertrude., Child Growth through Education. New York: The Ronald Press Company, 1948. 437pp.

A fine elementary school curriculum volume advocating the use of unified learning in our schools as the correct

means of educating our children. The emphasis is on the activity concept of learning throughout the chapters of the book and would serve as an excellent reference for general philosophy of this kind of program in the elementary school.

Teacher Reference

Huggett, Albert J. and Cecil V. Millard. Growth and Learning in the Elementary School. Boston: D. C. Heath and Co., 1946. 414pp.

Chapter 11 lists and explains a number of objectives of arts and crafts in the elementary school. The advantages and disadvantages of a unit and a correlated activity program are discussed, finally suggesting that the best of both be utilized whenever possible. The author is of the opinion that arts and crafts can best be used as a resource rather than a content of study for the elementary school.

Teacher Reference

Husbands, Kenneth L., (editor) Teaching Elementary School Subjects. New York: The Ronald Press Company, 1961. 474pp.

The book is a compilation of chapters written by prominent people in their respective fields of elementary education. Chapters 19 and 20 were written by Mary-Margaret Scobey about arts and crafts experiences and their relationship to the whole elementary school curriculum. She presents objectives, materials and their uses and the scope of an integrate arts program. She considers the experiences of art, arts and crafts, and industrial arts as being very closely related.

Teacher Reference

Illinois Industrial Education Association. Industrial Education. Illinois Industrial Education Association, 1940. 59pp.

A symposium on industrial education written as a result of a unanimous vote of the executive committee of the Illinois Industrial Education Association in favor of writing this, following the 1939 convention. Chapter IV deals specifically with the "Objectives and Characteristics of Handwork in the Elementary School" by Louis V. Newkirk.

Teacher Reference

Lane, Howard. Understanding Human Development. New Jersey: Prentice-Hall, 1961. 492pp.

The theme of this book is how a cell becomes a personality. It is intended as a guide for nuturing individualism.

Teacher Reference

Melvin, A. Gordon., Education-A History. New York: The John Day Company, 1946. 373pp.

Part IV, which included chapters 12, 13, 14, 15, 16, 17, would serve the elementary teacher well as background material to further her understanding of the development of an activity program as we know it today. Many of the early founders of this philosophy are mentioned in these pages.

Teacher Reference

Micheels William., Measuring Educational Achievement. New York: McGraw-Hill, 1950. 496pp.

Can serve as a handbook for answering the numerous questions on testing and evaluation that besiege teachers. Among the many types of tests that are discussed are multiple choice, true-false, matching, and recall items.

Teacher Reference

National Education Association, Educational Policies Commission. Education for ALL American Children. Washington, D. C. 1948, 292pp.

Implications for industrial arts or art activities are presented throughout the text. Specific references to activities in the curriculum are made on pp. 42, 43, 109, 168-69, and 234.

Teacher Reference

National Education Association, Policies for Education in American Democracy. Washington 6, D. C., 1946. 277pp.

Excellent reading for anyone interested in the constantly changing needs of education in our society. It provides food for thought as to whether or not we are fulfilling these needs. Many implications for industrial arts activities throughout the writing.

Teacher Reference

Roberts, Roy W., Vocational and Practical Arts Education. New York: Harper & Brothers, 1957. 637pp.

An industrial education book that would serve well as a source of information dealing with the many aspects of industrial arts. The writer presents the history, development and principles of industrial arts from the elementary school through vocational training. Chapter 3 would be of special interest to the elementary school teacher interested in the history and development of the practical arts movement. Pp. 63-91.

Teacher Reference

Rudolph, Marguerita., Kindergarten-A Year of Learning. New York: Appleton-Century Crafts, 1964. 396pp.

This book attempts to show how teachers can teach today's children effectively in the kindergarten. There is a section about the workbench in kindergarten.

Teacher Reference

Tenenbaum, Samuel., William Heard Kilpatric, Trail Blazer in Education. New York: Harper and Brothers, 1951. 318pp.

Many thoughts on progressive education are presented. The author has written a book that is prefaced by John Dewey about a former professor of his who is a proponent of the "project method." Although not an industrial arts book, implications for present-day elementary industrial arts are strong and plentiful. Very useful to the person interested in the educational value of such a program.

Teacher Reference

University of Harvard Committee., General Education in a Free Society. Cambridge: Harvard University Press, 1950. 267pp.

Fine insight into the theory and basis of general education in our schools. Although most of the writing is directed toward high school and college work, implications for the elementary school are many. Pages 127-32 specifically refer to the arts, which might easily include the industrial arts as an area of general education.

Teacher Reference

ELECTRICITY

Adler, Irving. Electricity in Your Life. New York: Day, 1965. 125pp.

The author explains the basics of electricity in a clear and concise manner, giving electricity's nature, history, and many essential uses in the modern world.

Upper

Aulaire, Ingri. Benjamin Franklin. New York: Doubleday and Company, Incorporated, 1950. 48pp.

This book tells the inventions of Ben Franklin beginning with his boyhood - for example: dipping candles, kite sailboat, electricity, Poor Richards Almanac, printing. Every other page is a large colorful picture. The reading is easy for a third grade. The story would be interesting for all primary if read by teacher It is an interesting story as well as informative.

Primary

Beasley, Rex. Edison. New York: Chilton Books, 1964. 175pp.

This book follows Edison through his youth, middle years of success and failure, to the twilight of time and honor. The author attempts to project a living picture of the famous man and concentrate on the human aspects rather than on the creations.

Upper

Bender, Alfred. The Electron. New York: Sentinel, 1960. 128pp.

The author discusses how we get electricity from the world around us. He goes into an easy to understand detail of the electron, electro-magnet, battery, magnetism, and thermoelectricity.

Teacher Reference

Bloch, Marie. Herbert, the Electrical Mouse. New York: Messner, 1953. 63pp.

A young boy helps his father do electrical jobs. His pet, a mouse, can also help out during the difficult task of putting a cable through a school wall.

Intermediate

Boy Scouts of America. Electricity. New Jersey: Boys Scouts of America, 1966. 58pp.

Magnetism, static-electricity, and electric current are discussed along with illustrated information on artificial respiration.

Teacher Reference

Corbett, Scott. What Makes a Light Go On? Boston: Little, Brown and Company, 1966. 56pp.

Simple text, easy to understand, with many illustrations. Presents a basic understanding of electricity, from a flashlight, to home, and home appliances.

Intermediate

Eberle, Irmegarde. Benjamin Franklin. New York: Franklin Watts, 1961. 139pp.

A biography of Benjamin Franklin. Some illustrations.

Intermediate

Faraday, Michael. On the Various Forces of Nature. New York: Crowell, 1957. 155pp.

This book was based on Mr. Faraday's lectures between 1859-1860. It deals with gravitation, cohesion, chemical affinity, and electricity.

Upper

Feravolo, Rocco V. Junior Science Book of Electricity.

A well written book on electricity for young readers interested in knowing about electricity and how it works. Clear explanations of many electrical terms are given along with several simple experiments. Illustrated

Intermediate

Graves, Charles. Benjamin Franklin, Man of Ideas. Illinois: Garrard Press, 1960. 79pp.

A simple story of Ben Franklin and his kite and his efforts to end the war and write the Constitution of the United States of America.

Primary

Hays, Wilma P. Samuel Morse. New York: Franklin Watts, Inc., 1966. 112pp.

A biography of Samuel Morse's life, his inventions, difficulties, success and honors.

Intermediate

Kaufman, Mervyn. Thomas Alva Edison. Illinois: Garrad, 1962. 80pp.

A biography of Edison's life and how his many jobs provided him with a good background for his inventions.

Primary

Levine, I. Electronics Pioneer, Lee DeForest. New York: Messner, 1964. 192pp.

DeForest's first successful invention was a wireless receiver far superior to Marconi's. Then he perfected the Audion tube and paved the way for radio broadcasting and long distance telephone.

Upper

Lush, Clifford K. and Glenn E. Engle. Industrial Arts Electricity. Peoria: Charles A Bennett Company, Inc., 1959. 159pp.

Although this book is specifically geared for the industrial arts shop program for junior high school students, the elementary teacher might find this text useful in learning more about the fundamentals of electricity ranging from electromagnetism and low voltage circuit wiring to communication and power generators and motors. It is presented in non-technical language with many illustrations to help clarify most of the concepts discussed.

Upper and/or Teacher Reference

May, Charles. Michael Faraday and the Electric Dynamo. New York: Watts, 1961. 144pp.

Michael Faraday was a blacksmith's son who became one of the world's most honored scientists. Because of his electric dynamo, widespread electrical power eventually became possible.

Upper

McKown, Robin. Benjamin Franklin. New York: G. P. Putnam's Sons - 1963. 189pp.

This definitive biography traces a fascinating development of an impetuous and saucy youth who became a beloved man on his native soil and throughout the world.

Upper

Notkin, Jerome. The How & Why Book of Electricity. New York: Grosset & Dunlap, 1960. 48pp.

This book includes more than a dozen experiments to help readers discover what others have found before.

Intermediate

Reuben, Gabriel. Electronics for Children. New York: Sterling Publishing Company, 1960. 88pp.

Safe experiments in fields of magnetism, electricity, electronics, and nuclear energy are given. Simple home equipment is suggested for experiments. Directions and pictures are easy to follow. The principles of the experiments are explained.

Intermediate

Shepherd, Walter. Electricity. New York: The John Day Company, 1964. 47pp.

A brief narrative on the main concepts of electricity with clear explanations of terms and some experiments to try.

Intermediate

Sootin, Harry. Experiments. New York: Watts, 1962. 240pp.

Two hundred basic experiments concerning magnetism and electricity are clearly presented for the reader.

Upper

Steinberg, William. Electricity & Electronics. Chicago: American Technical Society, 1957. 285pp.

Information about basic electricity and electronics is presented in a direct, simple manner. At the end of each unit, there is a group of review questions. Projects mentioned are interesting and useful.

Upper

Tannenbaum, Harold. We Read About Electricity and How it is Made. New York: Webster, 1960. 24pp.

This book tells the ry of how electricity is made and the daily services it performs.

Primary

Thomas, Henry. Charles Steinmetz. New York: Putnam, 1959. 126pp.

Biography of Steinmetz. His migration to this country from Germany, the trials he encountered, his first job as an engineer,and his widespread fame as a result of his genius.

Intermediate

Tottle, John. Benjamin Franklin. Chicago: Houghton-Mifflin, 1958. 192pp.

The life of Benjamin Franklin from age seven.

Upper

Waller, Leslie. A Book to Begin on Electricity. New York: Holt, Rinehart, and Winston, 1961.

A beginner's book on the discovery of electricity and how it works. It includes stories of Watson, Franklin, Volta, Dary, Bell, and Edison.

Primary/Intermediate

Yates, Raymond. A Boy and a Battery. New York: Harper & Brothers, 1959. 119pp.

The author tells how to make a battery, the history of electricity and batteries, facts on electromagnetism, blown fuses, solar and atomic batteries,and thermoelectric cells.

Intermediate

ELEMENTARY CURRICULUM

Beck, Robert H., Walter W. Cook,and Nolan C. Kearney. Curriculum in the Modern Elementary School. Englewood Cliffs: Prentice-Hall, Inc., 1960. 513pp.

Chapter 19 presents the case of "Fine Arts and Crafts" in the elementary school curriculum. Author treats the closely related areas of art and industrial arts in the elementary school as one. Briefly mentions the use of a unified arts program as a means of advancing the activity program to advantage in the elementary grades.

Teacher Reference

Browne, Sibyl and others. Art Materials for the Schools. New York: Reliable Press, Inc., 1943. 112pp.

Basically an art book, although most of the activities suggested could easily be considered industrial arts work. Would serve the elementary teacher well in obtaining ideas in many of the craft areas as well as activities in map making, pictorial charts, posters and handbills, exhibits,and a chapter dealing with materials and design.

Teacher Reference

Bryce, Mayo J. and Harry B. Green. Teachers Craft Manual. San Francisco: Fearon Publishers, 1956. 79pp.

This is basically a handbook of craft techniques, intended to supplement class lectures and demonstrations on many different activities. Although the writers do not attempt to include all crafts for the elementary school, they do intend to give the reader certain basic skills as a foundation for acquiring many others. Provides many worthwhile ideas for both the inexperienced and the experienced teacher.

Teacher Reference

Cincinnati Public Schools. The Primary Manual--A Teachers Guide. Curriculum Bulletin 95, Cincinnati, Ohio, 1951. 577pp.

A basic compilation of many courses of study, in an attempt to improve the curriculum development program of the Cincinnati Public Schools. The manual contains information on many elementary school subjects, among which are art, plus construction and handwork. Pages most significant to the development of the activity concept at the elementary level would be 541-562, and 563-576.

Teacher Reference

D'Amico Victor. Creative Teaching in Art. Scranton: International Textbook Company, 1953. 287pp.

This is primarily an art book with some fine implications for design in the industrial arts of craft activities for the elementary school. Chapter 8 specifically deals with "The Child as Designer and Craftsman," and gives some excellent insight into this often neglected area of creative design of simple projects.

Teacher Reference

Dutton, Wilbur H., and John A. Hockett. The Modern Elementary School Curriculum and Methods. New York: Holt, Rinehart and Winston, 1960. 530pp.

Chapter 12 deals with the art program in the elementary school, with specific references to the arts and crafts curriculum as evolving from the natural everyday experiences of children (p. 364). Although specifically referring to art throughout this chapter, many of the activities discussed might just as easily be industrial arts experiences.

Teacher Reference

Hoot, Margaret H., Teaching Art in the Elementary School. New York: Rinehart and Company, Inc., 1955. 284pp.

Although labeled as an art book, much useful information for activities for the elementary school in general is presented. The author believes in integrated activity for elementary school children and is consistent in her writing by continual use of industrial arts activities as well as art activities, although she does not call it this.

Teacher Reference

Hurley, Beatrice D. Curriculum for Elementary School Children. New York: The Ronald Press Company, 1957. 402pp.

The author considers all art experiences, whether it be painting or working with wood, as an essential contribution to the overall learning experiences of the elementary school child. What is generally referred to as art in this chapter could easily, in many cases, be considered industrial arts activities as well. The main consideration here is the creative interaction inherent in the manipulation of tools and materials.

Teacher Reference

Lee, J. Murray and Doris May Lee. The Child and His Curriculum. New York: Appleton-Century-Crofts, Inc., 1960. 710pp.

An elementary curriculum book containing many implications for industrial arts activities with some specific references to its place in the classroom on pp. 182, 183, 201, and 202.

Teacher Reference

Ragan, William B. Modern Elementary Curriculum. New York: Henry Holt and Company, 1960. 505pp.

An elementary curriculum book with two sections specifically dealing with the activity program. Pages 112-133 discuss the advantages of "Unified Learning" and suggest some

possibilities for activities as well as organization of this type of program. Pages 371-372 give a brief statement of the purposes of industrial arts in the elementary school curriculum.

Teacher Reference

Reavis, William C., and others. Administering the Elementary School. New York: Prentice-Hall, Inc., 1953. 631pp.

Chapter 9 deals with special areas and subjects, wherein some specific mention of industrial arts and arts and crafts is made. Pages 222-225 would be of most value.

Teacher Reference

Stratemeyer, Florence B. and others. Developing a Curriculum for Modern Living. New York: Bureau of Publications, Teachers College, Columbia University, 1947. 558pp.

A curriculum book dealing with the elementary school in general, with some interesting insights into our industrial civilization and how the interdependence of man affects the school program. Several references toward providing effective experiences, as well as materials and equipment for maximum growth, are made. The pages most significant to the use of an activity program would be 34-50, 353-55, 418-26, and 459-64.

Teacher Reference

The National Society of College Teachers of Education. Preparation of Teachers in the Area of Curriculum and Instruction. Educational Monograph Number 2. Austin: The University of Texas Printing Division, 1951. 89pp.

Chapter 7 concerns itself with "Guiding and Developing the Learning Activities." Many interesting thoughts dealing with the resource unit and the responsibility of the teacher to provide many avenues of learning for her pupils, often times far removed from the subject matter concept. Much concern is shown for teachers to learn through actual experiences if they are to be able to guide the growth of children by means of the basic psychological principle of "learn to do by doing."

Teacher Reference

ELEMENTARY INDUSTRIAL ARTS BASIC CONTENT, THEORY, AND PHILOSOPHY

American Association of Teachers Colleges. School and Community Laboratory Experiences in Teacher Education. Prepared by the Sub-Committee of Standards and Surveys, 1948. 340pp.

The text is concerned with the involvement of the prospective teacher in actual laboratory experiences in the early training or teacher education program, implicating the activity concept in teacher preparation.

Specific references to professional courses in industrial arts for the elementary school teacher are made on pages 48 and 56.

Teacher Reference

Association for Childhood Education, International. Recommended Equipment and Supplies for Nursery, Kindergarten, Primary and Intermediate Schools. Compiled by the Committee on Equipment and Supplies. Washington: Association for Childhood Education, International, 19 44pp.

A listing of tools and equipment necessary for a craft area in the elementary school classroom for kindergarten through the intermediate grades. The equipment and supplies listed were tested and approved by the A. C. E. I. The directory of manufacturers and distributors at the end of the booklet will also be found most helpful in purchasing needed items.

Teacher Reference

Barlow, Melvin L. History of Industrial Education in the United States. Peoria: Chas. A. Bennett Co., Inc., 1967. 512pp.

A comprehensive study of Industrial Education in the U.S., including much that is relevant to the theory and philosophy of elementary school industrial arts.

Beck, Robert H., Walter Cook and Nolan C. Kearney. Curriculum in the Modern Elementary School. Englewood Cliffs: Prentice-Hall, Inc., 1960. 513pp.

Chapter 19 presents the case of "Fine Arts and Crafts," in the elementary school curriculum. Author treats the closely related areas of art and industrial arts in the elementary school as one. Briefly mentions the use of a unified arts program in a means of advancing the activity program to advantage in the elementary grades.

Teacher Reference

Bennett, Charles A. History of Manual and Industrial Education up to 1870. Peoria: Charles A. Bennett Company, Inc., 1926. 461pp.

Provides a great deal of useful background information on many of the people and movements responsible for our present-day industrial arts programs, both in high school and the elementary school. Perhaps one of the most complete books of its kind.

Teacher Reference

Bennett, Charles A. History of Manual and Industrial Education 1870 to 1917. Peoria: Charles A. Bennett Company, Inc., 1937. 566pp.

A continuation of an earlier volume "History of Manual and Industrial Education up to 1870." Perhaps more meaningful to elementary school teachers interested in more recent information on industrial arts movements, because much of the book is devoted to Manual Training in the United States, with a section specifically set aside for manual training in the elementary school.

Teacher Reference

Bonsor, Frederick G., and Lois C. Mossman. Industrial Arts for Elementary Schools. New York: Macmillan Company, 1939. 491pp.

One of the early writings dealing with tne "modern concept" of industrial arts in the elementary school. This book has served well as the basis of our present day philosophy for correlation of industrial arts activities with subject matter content.

Part one deals with the thought behind industrial arts at this level, and part two covers the application of these principles through suggestion of a number of possible studies that could be undertaken in each of the grades from one through six.

Teacher Reference

Byram, Harold M. and Ralph C. Wenrich. Vocational Education and Practical Arts in the Community School. New York: The Macmillan Company, 1956. 512pp.

Excellent background information for anyone interested in the relationship of vocational educatio.. and practical arts to the community school concept of education. Presents some interesting insight into the community school, and the many aspects of such a program. Of especial interest to the elementary teacher would be chapters nine, ten, and eleven, which concern themselves specifically with the elementary school program.

Teacher Reference

Caswell, Hollis L. and Arthur W. Foshay. Education in the Elementary School. New York: American Book Company, 1957. 430pp.

An elementary curriculum book with some specific references to an experience curriculum and the idea of integration as it should relate to the activity program (pp. 250-256). The elementary school teacher will find this section helpful in establishing a philosophy for the activity program in her classroom.

Teacher Reference

Cole, Percival R. Industrial Education in the Elementary School. New York: Houghton Mifflin Company, 1914. 64pp.

This book provides an interesting insight into industrial education in early times and shows how the program at the elementary level has undergone a developmental period. Excellent reading for anyone interested in the historical background of this type of program, as compared to present day philosophy.

Teacher Reference

Gerbracht, Carl and Robert J. Babcock. Elementary School Industrial Arts. New York: Bruce Publishing Company, 1969. 280pp.

An excellent reference for beginning an industrial arts program for K-6. It deals with such important points as: The Place of Industrial Arts in Elementary schools; Facilities, Equipment, Tools,and Supplies; Basic Skills Projects: and a fine list of industrial arts activities for each grade K-6. The final chapter concerns itself with the role of the industrial arts consultant.

Teacher Reference

Gerbracht, Carl and Frank E. Robinson. Understanding America's Industries. Bloomington: McKnight & McKnight Publishing Company, 1962. 274pp.

Although this textbook was primarily written for junior high school children, it would provide excellent reading for the adult interested in expanding his knowledge of the modern concept of industrial education and further his understanding of some important industries of this country. The author discusses, in easy to understand terminology, six important industries, plus an excellent section on mass production and others on mining, fuels,and power.

Teacher Reference

Gilbert, Harold G. Children Study American Industry. Dubuque: Wm. C. Brown Company, 1966. 211pp.

An excellent resource book for elementary teachers interested in a wide variety of industrial arts activities for the classroom K-6. A chapter of Values and Procedures of industrial arts, is very helpful. Other chapters include: Development of Industry, Manufacturing Activities, Construction Activities, Communication Activities, Transportation Activities,and Power Activities.

Teacher Reference

Gunther, Theresa C. Manipulative Participation in the Study of Elementary Industrial Arts. New York: Bureau of Publications, Teachers College, Columbia University, 1931. 58pp.

Although written in the 1930's, this study presents a fine case for the use of manipulative activities in the elementary school classroom. The experiment was conducted under controlled conditions, and the methods as well as the findings are clearly presented and concluded.

Teacher Reference

Ham, Charles H. Manual Training. New York: Harper & Brothers, 1886. 403pp.

Worthwhile reading from the historical standpoint in that it describes the Chicago Manual Training School as well as some of the early philosophy of manual training in this country and Europe. This book is excellent reading for anyone interested in following the industrial arts movement in the United States from past to present.

Teacher Reference

Harrison, O. S Industrial Arts and Handcraft Activities Minneapolis: Burgess Publishing Company, 1959. 132pp.

A consideration of the fundamentals of elementary school industrial arts program, basic philosophy of such a program, along with a good list of tools for handwork. The author spends some time in discussing the integration of handwork, as well as techniques of developing the activity unit. Good and complete examples of the activity unit are given.

Teacher Reference

Herrick, Virgil E. and others. The Elementary School. Englewood Cliffs: Prentice-Hall, Inc., 1956. 474pp.

Chapter 12 deals with "The Arts in the Elementary School," including industrial arts activities, through implication, in such forms as using simple woodworking tools, construction,and clay work placing the responsibility for use and instruction of these integrated activities on the classroom teacher rather than on the specialist.

Teacher Reference

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A fine elementary school curriculum volume advocating the use of unified learning in our schools as the correct means of educating our children. The emphasis is on the activity concept of learning throughout the chapters of the book and would serve as an excellent reference for general philosophy of this kind of program in the elementary school.

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are discussed, finally suggesting that the best of both be utilized wherever possible. The author is of the opinion that arts and crafts can best be used as a resource rather than a content of study for the elementary school.

Teacher Reference

Hurley, Beatrice D. Curriculum for Elementary School Children. New York: The Ronald Press Company, 1957. 402pp.

The author considers all art experiences, whether it be painting or working with wood, as an essential contribution to the overall learning experiences of the elementary school child. What is generally referred to as art in this chapter could easily, in many cases, be considered industrial arts activities as well. The main consideration here is the creative interaction inherent in the manipulation of tools and materials.

Teacher Reference

Husbands, Kenneth L (editor). Teaching Elementary School Subjects. New York: The Ronald Press Company, 1961. 474pp.

This book is a compilation of chapters written by prominent people in their respective fields of elementary education. Chapters 18 and 19 were written by Mary-Margaret Scobey about arts and crafts experiences and their relationship to the whole elementary school curriculum. She presents objectives, materials and their uses and the scope of an integrated arts program. She considers the experiences of art, arts and crafts, and industrial arts as being very closely related.

Teacher Reference

Kirkwood, James J. Selected Readings: Industrial Arts for The Elementary Grades. Dubuque: Wm. C. Brown Co., 1968. 108pp.

This book would serve to orient interested persons towards a rational approach in using industrial arts activities.

A compilation of writings from many individuals actively involved in elementary industrial arts type activities, both past and present.

Teacher Reference

Kerschensteiner, George M. The Idea of the Industrial School. New York: The Macmillan Company, 1913. 110pp.

An interesting historical insight into the concept of industrial education in the early 1900's. The appendix is of particular interest in that it provides an example of what had been accomplished through industrial training of first grade children from the Munich, Germany elementary schools.

Teacher Reference

Larsen, Delmar, and Herbert L. Nelson, Ed. Elementary School Industrial Ar · Selected Readings and Resources. Ypsila University Printing, 1968. 189pp.

A compilation of wi ngs from many authors, dealing with such topics as Philosc y and objectives, curriculum, and Methodology; Impleme tion of Industrial Arts in the Elementary School; Selecte Resources for Elementary School Industrial Arts, and others. A good source of basic reading, much of which might be difficult to obtain otherwise.

Teacher Reference

Lee, J. Murray and Doris May Lee. The Child and His Curriculum. New York: Appleton-Century-Crofts, Inc., 1960. 710pp.

An elementary curriculum book containing many implications for industrial arts activities with some specific references to its place in the classroom on pp. 182, 183, 201, and 202.

Teacher Reference

Masengill, John P. Selections in Philosophy and Psychology Relating to Industrial Arts Education. Peoria: Bradley University, 1951. 226pp.

A compilation of many fine readings dealing with the thought behind industrial arts today. After considerable reading, the author formulates twenty-eight principles with which industrial arts must be concerned if it is to add to the educational growth of the individual. This study shows that industrial arts is significant educationally with many implications for use of this area starting at the elementary level.

Teacher Reference

Melvin, A. Gordon. Education a History. New York: The John Day Company, 1946. 374pp.

Part IV, which includes chapters 12, 13, 14, 15, 16,and 17, would serve the elementary teacher well as background materials to further her understanding of the development of the activity program as we know it today. Many of the early founders of this philosophy are mentioned in these pages.

Teacher Reference

Moore, Frank C., Carl H. Hamburger, and Anna-Laura Kingzett. Handcrafts for Elementary Schools. Boston: D. C Heath and Company, 1953. 324pp.

The contents hold much useful information on organizing and administering a craft program in the elementary school. It would answer most questions one might have in regard to such a program. Various tools and materials are described, along with designs and patterns for many of the crafts.

Teacher Reference

Mossman, Lois C. The Activity Concept. New York: Macmillan Company, 1940. 197pp.

This is deep considered thought in relation to the activity concept, brought about through working with colleagues at Teachers College, Columbia University. The elementary teacher will find this book especially helpful in trying to understand this basic philosophy as it relates to her and her classroom.

Teacher Reference

Newkirk, Louis V. Integrated Handwork for Elementary Schools. New York: Silver Burdett Company, 1940. 342pp.

One of the early writings dealing with the integrated handwork philosophy for industrial arts in he elementary school. It is divided into two sections: one dealing with the general philosophy of handwork activities, as well as tools and materials; and the other providing many handwork ideas and techniques. Most crafts are included in the second section.

Teacher Reference

Otto, Henry J. Principles of Elementary Education. New York: Rinehart and Company, Inc., 1949. 430pp.

An elementary curriculum book that, along with general curriculum problems, takes a good long look at activities and their use in the elementary grades. Chapter nine deals specifically with some of the many aspects of activity that should be utilized by the elementary school teacher.

Teacher Reference

Ragan, William B. Modern Elementary Curriculum. New York: Henry Holt and Company, 1960. 505pp.

An elementary curriculum book with two sections specifically dealing with the activity program. Pages 112-133 discuss the advantages of "unified learning" and suggest some possibilities for activities as well as organization of this type of program. Pages 371-372 give a brief statement of the purposes of industrial arts in the elementary school curriculum.

Teacher Reference

Scobey, Mary-Margaret. Teaching Children About Technology Bloomington: McKnight and McKnight Pub. Co., 1968. 414pp.

Provides a theoretical and pedagogical basis for the study of technology in the elementary school. Describes present processes and trends within industry, and makes suggestions for a variety of classroom activities that will help children better understand the world of technology.

Teacher Reference

Strategmeyer, Florence B. and others. Developing a Curriculum for Modern Living. New York: Bureau of Publications, Teachers College, Columbia University, 1947. 558pp.

A curriculum book dealing with the elementary school in general, with some interesting insights into our industrial civilization and how the interdependence of man affects the school program. Several references toward providing effective experiences, as well as materials and equipment for maximum growth, are made. The pages most significant to the use of an activity program would be 34-50, 352-55, 418-26,and 459-64.

Teacher Reference

Swanson, Wendell L. Industrial Arts in Grades K-6. Springfield: The Office of the Superintendent of Public Instruction State of Illinois, Undated. 52pp.

The manual is designed to help teachers of elementary industrial arts develop proper psychological justification, teaching methods, skills with tools, and knowledge of available materials.

Teacher Reference

Taylor, James L., Jack D. Herrington and others. Designing Elementary Classrooms. Special Publication No. 1, Washington, D. C.: U. S Office of Education, U. S. Government Printing Office, 1953. 55pp.

An excellent reference for the elementary teacher faced with planning a new classroom. Much general information with specific lists of tools, equipment, and supplies for activity areas within the classroom on pp. 9, 53, 54, and 55.

Teacher Reference

Wilber, Gordon O. Industrial Arts in General Education. Scranton: International Textbook Company, 1954. 401pp.

One of the basic purposes of this book is to promote thinking about many of the problems of general education and particularly those in industrial arts. The elementary teacher would find this text valuable in that it could give him excellent background for the initiation of a program at this level.

Teacher Reference

Addendum

Hoots, William R., Jr., et. al. National Conference on Elementary School Industrial Arts: A Report. Greenville, North Carolina: East Carolina University. 1970.

A report of the future goals and directions of elementary school industrial arts as perceived by many outstanding leaders in this area of education. The conference was proposed by the American Council for Elementary School Industrial Arts and funded by the U.S.O.E.

Miller, W. R., and Gardner Boyd. Teaching Elementary Industrial Arts. South Holland: Goodheart-Willcox, 1970. 224pp.

The book tells and shows how to use industrial arts activities to assist and encourage children to learn more effectively . . . . to discover new interests and talents. The material is presented in a sequence that is logical for easy teaching and learning.

ENERGY

Blackwood, Paul. Push and Pull. New York: Whittlesay House, McGraw-Hill Company, Inc., 1959. 180pp.

A careful study of energy in its various forms: solar energy; energy in objects; chemical energy; energy in the human body; electrical, radiant,and nuclear energy; and new sources of energy. Simple experiments are suggested and a good glossary of terms.

Upper

Decamp, Lyon. Energy and Power. New York: Golden Press, 1962. 54pp.

This book is about how man uses animals, wind, water, heat, electricity, chemistry, and atoms to help him in his daily living.

Upper

Grey, Vivian. Secret of The Mysterious Rays. New York: Basic Books, 1966. 120pp.

The discovery of X-rays by Roentgen leads to increased interest in the human body. This is a story of the X-ray's development.

Upper

Harrison, George Russell. The First Book of Energy. New York: Franklin Watts, 1965. 81pp.

A concise book with pictures about what is energy, kinds of energy, and using energy. A glossary is included.

Intermediate

Podendorf, Illa. The True Book of Energy. New York: Children's Press, 1963. 41pp.

A young scientist is introduced to the importance of energy and the different kinds of energy. Primary

Posin, Daniel Q. What Is Energy? Chicago: Benefic Press, 1962. 48pp.

A good first book of energy with colorful pictures. Printing a good size for easy reading. Picture dictionary is in the back.

Primary

ENGINES

de Camp, Sprague L. Engines. New York: Golden Press, 1959. 56pp.

A book which gives a complete history on engines. In this book we learn about man's use of power from the water wheel to the atomic pile. Pictures and illustrations are given for every engine discussed.

Intermediate

Epstein, Samuel. All About Engines & Power. New York: Random House, 1962. 140pp.

The author of this book tells about engines from the power of water and wind through the steam, gasoline, and Diesel engines to our nuclear reactors.

Upper

Piper, Watty. The Little Engine That Could. New York: Platt and nk, 1945. 37pp.

It is a good motivating book toward the study of trains and their use. There is metnion of the passenger and freight train. The moral is one to be shared among all children. The print is large with a picture on every page.

Primary

Williams Ellis. Engines, Atoms, and Power. Glasgow, England: G. P Putnam's Sons, 1958. 64pp.

Covers Benjamin Franklin and oil, John Dalton and gas, James Watt and power, heat, plastics, atoms, and nuclear power.

Intermediate

Wilson, Charles. Diesel: The Engine That Changed the World. New Jersey: Van Nostrand, 1966. 181pp.

Rudolph Diesel struggles to invent and improve his Diesel engine, and the book ends with the influence that the Diesel engine has had on the world.

Upper

ENGINEERING

Beim, Jerrold. Jay's Big Job. New York: William Morrow & Company, 1957. 46pp.

Large print and a picture on every page bring to life a realistic situation in a home. The story depicts a family working together and for themselves to repair and build around the house, when it comes time for a patio, and painting a bedroom, both father and son learn not all can be done alone. Good ideas for technology in the home.

Primary

Bendick, Jeanne. The First Book of How to Fix It. New York: Franklin Watts, Inc., 1961. 66pp.

The author explains how to repair various home items, accompanied by specific rules.

Intermediate

Cameron, Polly. "I Can't" Said The Ant. New York: Coward-McCann, Inc., 1961. 38pp.

Limericks that rh[illegible] verse, primary level. Read aloud to develop auditory discrimination for like sounds.

Primary

Hoban, Russell. What Does It Do and How Does It Work? New York: Harper & Brothers, 1959. 62pp.

This book explains some of our heavy power equipment primarily used in road construction. Each page is illustrated beautifully with one piece of the equipment.

Primary

Jackson, David. The Wonderful World of Engineering. New York: Garden City Books, 1960. 92pp.

Pictures and diagrams illustrate the construction of roads, airfields, bridges, canals, dams, and tunnels.

Upper

Lenski, Lois. Project Boy. Philadelphia: J. B Lippincott Company, 1954.

Teddy Parker liked plants and growing things even though he lived in a city housing project. His trials in growing pumpkins in his front yard were many but his crop was a big one. How the children live and play very interesting.

Intermediate

Mann, Martin. How Things Work. New York: Thomas Y. Crowell Company, 1960. 141pp.

Careful explanations, with illustrations, of the way the following items function: automatic transmission, out-board motor, movie cameras, dial phones, refrigerators and air conditioners, record players and tape recorders, flourescent lamps, television receivers, and bicycle gear-shifts.

Upper

McClintock, Mike. What Have I Got? New York: Harper & Bros.

A little boy finds a string. From this string he imagines he can travel, build, be a sportsman, etc. It shows to a youngster the world of imagination. The pictures are colorful. There is approximately one sentence to a page and the print is large.

Primary

Pease, Josephine Van Dolgen. It Seems Like Magic. New York: Rand McNally, 1946. 79pp

The author attempts to answer the many questions of children concerning everyday happenings. For example:

Why does a train work? Where does oil come from? What is an echo?

Intermediate

Stirling, Nora. Wonders of Engineering. New York: Doubleday, 1966. 128pp.

Unique and "impossible" feats of engineering are pictured and discussed in this book. The examples such as the Aqua Marcia Aqueduct, St. Paul's Cathedral, and the Panama Canal show the wide expanse of engineering in today's science.

Intermediate

FIBERS

Adler, Irving and Ruth. Fibers. New York: John Day Company, 1964. 46pp.

Many different kinds of fibers are presented--flax, hemp, ramie, jute, kenaf, roselle, aramina, sisal, abaca, coir, kapok, raffia, esparto, and wool. Spinning, weaving, knitting, and ropemaking are described. Diagrams show how acetate is made. Also discussed are the man-made fibers of mylon, fiberglas, acrylic, polyester, and spandex. Fiber index.

Intermediate

Baity, Elizabeth. Man is a Weaver. New York: Viking, 1942. 334pp.

Helpful to this level student desiring to know about the history of weaving and the weaving industry in general.

Upper

GLASS

Buehr, Walter. Marvel of Glass. New York: Morrow, 1963. 93pp.

The author begins with a history of glass from its accidental discovery of glass blowing to our present age in which whole buildings are made from glass. He then writes about different kinds of glass and how it is made.

Upper

Diamond, Freda. The Story of Glass. New York: Harcourt, Brace, & Co., 1953. 246pp.

A little difficult for general elementary school use, although some children in the upper grades would find this book most interesting and useful. The author takes a rather complete look at the glass industry of today and how it affects all our lives. Illustrated throughout to help make the story of glass more understandable

Intermediate

Epstein, Beryl and Sam.. The First Book of Glass, New York: Franklin Watts, Inc., 1955. 64pp

A good elementary book relating the story of the glass industry and to what extent this ceramic material serves mankind. Intermediate and upper elementary children can learn many interesting facts about glass, such as how it is made, blown, formed, polished,and transformed into a threadlike material. Well illustrated to make glass, and modern uses of glass.

Intermediate

Huether, Anne. Glass and Man. Philadelph... J. B. Lippincott Co., 1963.

This text provides a vivid and complete account

of the history and development of glass as an art form, as a scientific tool, and as an industry. The book was illustrated with drawings by the author.

Upper

Pryor, William. The Glass Book. New York: Harcourt-Brace, 1935. 100pp.

A young boy visits a glass factory and learns how glass is made and molded. He also watches a man making a stained glass window and experiments with glass himself.

Intermediate

GRAPHIC ARTS

I.G.E.A. Story of Graphic Arts Education. Washington, D. C.: I.G.E.A., 1962. 93pp.

This is the chronological record of the origins and developments in Graphic Arts education.

Teacher Reference

Kagy, Fred. Graphic Arts. Chicago: Goodheart-Willcox, 1961.

This book will acquaint you with the basic mechanics of various types of printing, composition fundamentals, and basic ingredients of printed pieces.

Teacher Reference

Karch, Randolph. Graphic Arts Procedures. Chicago: American Technical Society, 1957. 383pp.

The printing trades are described carefully and each of their techniques are explained with plenty of illustrations. Basic printing processes are analyzed, the differences in type faces are portrayed, and the methods of display and layout are outlined. The last chapters cover a description of the making, engraving, and printing of the finished plates.

Teacher Reference

HANDICRAFTS AND HOBBIES

Ackley, Edith F. Dolls to Make for Fun and Profit. New York: J. B. Lippincott Company, 1951. 126pp.

Although not written specifically for children, most of the instructions and drawings could be understood by upper elementary school children. Included in this book are many full size patterns for dolls' clothes and dolls made from cloth and stuffed with cotten. Educational and fun for anyone interested in sewing.

Upper/Teacher Reference

Adair, Margaret. Do-It-In-A-Day Puppets. New York: Day, 1964. 88pp.

Simple methods of making puppets quickly from easily obtained materials is shown, and sample scripts are given at the end.

Intermediate

Alexander, M. Weaving Handicraft. Illinois: McKnight, 1954.

The weaving devices included here are presented to give the inexperienced a taste of simple weaving. Emphasis is placed on the simplicity of the loom and fabric. Good suggestions are given for projects in the intermediate grades.

Teacher Reference

Amon, Martha. Handcrafts Simplified. Illinois: McKnight, 1961. 210pp.

Sixteen crafts are described in clear, concise, how-to-do-it language with many illustrations to help construction. Proper used of tools and mediums are up to date.

Teacher Reference

Armer, Alberta. Screwball. Cleveland and New York: World Publishing Company, 1963. 202pp.

A fiction which depicts a boy who learned how to adjust himself to accept his handicaps through the manipulation, physical and mental,of tools and materials.

Intermediate

Bale, Robert O. Creative Nature Crafts. Minneapolis: Burgess Publishing Company, 1959. 120pp.

Loaded with ideas for craft projects that are centered around materials from nature that are locally obtained. Can be most useful to the elementary teacher and is written in such a manner as to be helpful to any intermediate or upper elementary school child.

Upper/Teacher Reference

Batchelder, Marjorie. The Puppet Theater Handbook. New York: Harper and Brothers. 1947.

"Good chapter on puppet construction, helpful for nursery school teachers. Also materials on stages, plays, etc. Helpful for persons working with club aged children."

Teacher Reference

Bendick, Jeanne and Barbara Berk. The First Book of How to Fix It. New York: Franklin Watts, Inc., 1961. 69pp.

An excellent book for the young do-it-yourself addict, who has a real curiosity of the many things that might need repairing around the house, but does not have the confidence to begin. Authors carefully present a list of things that could be done and a list of repairs that should not be attempted. After some discussion of the tools needed, many repair jobs are presented through clear illustrations and careful, easy to follow explanations.

Upper/Teacher Reference

Bergstom, Marie G. Keep Busy Book for Tots. Garden City: Doubleday and Company, Inc., 1962. 128pp.

Although primarily designed as a book to entertain or provide children with something constructive to do, has some excellent ideas that could be used as an activity or part of an activity for the primary grades. Most useful sections listed in contents under: (1) Things to Do (2) Making Things.

Teacher Reference

Betty Crocker's Cook Book for Boys and Girls. New York: Simon and Schuster, 1957. 191pp.

A colorful and exciting cook book for boys and girls in the intermediate elementary grades and older. Each recipe has been tested and approved by a panel of twelve children. This book includes recipes for each meal of the day plus campfire cooking and a section on desserts and drinks.

Intermediate/Upper

Birdsong, June S. Children's Rainy Day Play. Scranton: Laurel Publishers, 1953. 118pp.

Designed for parents who need activities to keep children active and busy. Many ideas for activities all through the book, that may easily be applied to the classroom. Most useful for the primary grades.

Teacher Reference

Boehm, David A. Coinometry. New York: Sterling, 1954. 91pp.

The purpose of this book is to introduce the reader not only to a fascinating hobby, but to explain the history behind various types of money. History, economics, and coin collecting are all discussed.

Upper

Braverman, Bob and Newmann, Bill. Here is Your Hobby... Slot Car Racing. New York: Putnam, 1966. 128pp.

The information includes different scales of cars, kit building scratch building, motors, tuning tracks, and family hobby centers. It gives information about what a reader would want to know for his hobby. Photographs are on almost every page. An index and glossary are available. Print is large.

Upper

Brown, Helen E. and Philip S. Brown. The Boys' Cook Book. Garden City: Doubleday and Company, Inc., 1959. 285pp.

A book especially for boys from the intermediate grades up. This book is done in such a way it would inspire most boys to at least try cooking once. Author spells out some "don'ts" but spends most of the time on "do's". Along with the many recipes is included a glossary of terms that would be most helpful to the novice. Some animated characters are sprinkled into the text to give the book a feeling of fun.

Intermediate/Upper

Brown, Mamie E. Elementary Handcrafts for Elementary Schools. New York: Exposition Press, 1956. 104pp.

Ideas and activities presented could be made by children in the elementary grades, although book is written in the form of ideas for teachers. Covers most general craft areas and is well illustrated.

Teacher Reference

Carlson, Bernice. Make It and Use It. New York: Abington, 1958. 160pp.

The author uses step by step illustrations in showing how to create party favors, doll houses, puppets, etc. Good book for teachers and scout leaders.

Teacher Reference

Carlson, Bernice W. Fun for One or Two. New York: Abingdon Press, 1954.

A study of activities for boys and girls from 4 to 10. Most activities would be suitable for older age groups. In general, book more suitable for parents as most activities, as the title suggests, involve only one or two children.

Teacher Reference

Carlson, Bernice W. Make It Yourself. New York: Abingdon Press, 1950. 160pp.

A general crafts book loaded with project ideas for children at the intermediate level. The author includes an introductory chapter outlining such important facts as the equipment that will be needed.

Teacher Reference

Chapmen, Jane. Child's Book of Sewing. New York: Greenberg, 1951. 88pp.

A fine beginning book for the very young child who would like to learn how to sew. The book is hand lettered and well illustrated in color to hold even the youngest child's interest. Begins with the simplest of projects and moves to more difficult ones, giving complete instructions on measuring, pinning, cutting, stitching, etc.

Primary/Intermediate

Christopher, F. J. Basketry. New York: Dover, 1952. 108pp.

Materials, tools, terms, and directions for many kinds of reed baskets are well illustrated.

Teacher Reference

Craig, Marie. Boxes. New York: Norton, 1964. 36pp.

The author very cleverly tells the many kinds of boxes there are in the world, and what you can do with them. Well illustrated.

Primary

Cresse, Else B. Creative Crafts with Elementary Children. Dansville, New York: F. A. Owen Publishing Company, 1963. 79pp.

A delightful book loaded with many creative ideas in almost all craft areas for elementary children. Along with the different creative possibilities, many examples of actual children's work are presented.

Teacher Reference

Dryad Handicrafts. Handicrafts for Children. Peoria: Charles A. Bennett Company, Inc., Undated.

A series of leaflets originally published by Dryad Handicrafts, Leicester, England. This particular set deals with many little craft projects that children could make in such areas as wood, plastic, textiles, pattern-making with cut paper and painting.

Teacher Reference

Dryad Handicrafts. Handicrafts. Peoria: Charles A. Bennett Company, Inc., Undated.

A series of leaflets originally published by Dryad Handicrafts, Leicester, England. This set, although a little advanced for elementary school children, deals with crafts of all kinds and could be useful wherever craftwork is being undertaken.

Teacher Reference

Dryad Press, The. Decorative Handicrafts. Peoria: Charles A. Bennett Company, Inc., Undated.

A series of leaflets originally published by Dryad Handicrafts, Leicester, England. This particular set is concerned with the decorative effects of craft work. Some of the suggestions presented could be accomplished by elementary school children.

Teacher Reference

Eckgren, Betty L. and Vivian Fishel. 500 Live Ideas. Evanston: Row, Peterson & Company, 1952. 320pp.

A presentation of many ideas for primary through upper elementary grade Teachers. Most ideas on things to make are of the type that can be made with little, if any, additional classroom materials or equipment.

Teacher Reference

Fallis, Edwina. The Child and Things. Yonkers-on-Hudson: World Book Company, 1940. 184pp.

A listing of many activities for children in the primary grades. Many things to make and do are illustrated and described. Especially useful for the teacher, are the chapters on tools, materials, and things to make. Aside from the manipulative activities, the author included a chapter called "Things to Wonder About," which suggests many physical science outlets intended to spark real thought and imagination.

Teacher Reference

Foster, Josephine C. Busy Childhood. New York: D. Appleton-Century Company, Inc., 1933. 303pp.

A book designed to provide teachers and parents with information dealing with children's play activities. Chapter 5 deals with making things and discusses such materials as wood, paper, cloth, sand, and clay.

Teacher Reference

Fox, Lorene K. and others. All Children Want to Learn. New York: The Grolier Society, Inc., 1954. 223pp.

Part I is packed with activities for children in kindergarten and the primary grades. Each chapter, after presenting some needs of the child, suggests things the child can make himself. Part II has some thoughts for parents in planning and preparing these activities.

Teacher Reference

Franke, Lois. Handwrought Jewelry. Illinois: McKnight, 1962. 222pp.

This is a contemporary text for beginning jewelers. It covers the basic tools and techniques in a meaningful way. Illustrations are well chosen.

Teacher Reference

Frankel, Lillian and Godfrey Frankel. What to do With Your Preschooler. New York: Sterling Publishing Company, Inc., 1953. 120pp.

A compilation of activities for the pre-school child; many are presented that could be continued into the early primary grades. Chapter 4 deals with arts and crafts and gives some insight as to what children at this age are able to do.

Teacher Reference

Gaitskell, Charles D. Arts and Crafts in Our Schools. Peoria, Illinois: Charles A. Bennett Company, Inc., 1956. 62pp.

This book is based on a series of art bulletins revised many times by classroom teachers in the Ontario Province school systems. The intent is to outline a basic philosophy for art education, together with ways and means of putting it into effect. Chapter 4 deals specifically with the craft program and offers many helpful suggestions.

Teacher Reference

Garrison, Charlotte G. and Emma D. Sheehy. At Home with Children. New York: Henry Holt and Company, 1943. 256pp.

A presentation primarily to create an understanding of children's play activities and of what children like, should, and can do. Chapter 5 discusses the creative instinct and relates many activities for the early primary grades. Chapter 9 relates some science experiments that have to do with things in the child's environment. Teacher Reference

Girl Scouts. Girl Scout Handbook. New York: Girl Scouts, 155 East 44th Street. 1953. 510pp.

A girl scout handbook loaded with activities for young children. Presents projects for earning various scout ranks that can be made with inexpensive materials, as suggested in the headings of each chapter. A fine illustrated reference with many educational and active ideas.

Intermediate/Upper

Griseold, Lester. Handicraft. New York: Prentice-Hall, Inc., 1952. 480pp.

A rather complete general craft book encompassing most craft areas. Although a little advanced for elementary school children, it could be useful to the elementary teacher as a reference book for ideas, tools,and materials.

Teacher Reference

Hammet, Catherine T. and Carol M. Horrocks. Creative Crafts for Campers. New York: Association Press, 1957. 431pp.

A rather complete book dealing with nature crafts in such areas as braiding and knotting, basketry, ceramics, leatherwork, metalwork, printing, sketching, weaving,and woodworking. Each area presented includes a bibliography at the end of the chapter. The authors have made an effort to include sketches of tools needed, as well as techniques of tool use in all areas.

Teacher Reference

Haupt, Dorothy and D. Keith Osborn. Creative Activities. Detroit: The Merrill-Palmer School, 1955. 103pp.

A well organized resource manual for the elementary teacher interested in creative craft ideas in such areas as paper work, clay, woodwork, cooking,and many others. The

author includes a list of additional reading recipes and a page devoted to sources of supply.

Teacher Reference

Hoffman, P. Miss B's First Cookbook. New York: Bobbs-Merrill Company, 1950.

"Twenty different recipes--some too advanced for the preschooler, but others helpful."

Primary/Intermediate

Horowitz, Caroline. A Young Boy's Treasury of Things-to-Do. New York: Hart Publishing Company, 1946. 93pp.

More of an activity book than a crafts book, but the resourceful teacher may find some educationally valid activities that might well be correlated into her curriculum.

Primary/Teacher Reference

Hughes, F. Clarke. Amateur Handcraft. New York: The Bruce Publishing Company, 1947.

A collection of suggestions for crafts projects and procedures.

Upper/Teacher Reference

Hunt W. Ben. Crafts and Hobbies. New York: Simon and Schuster. 1957. 112pp.

Written for children in the Golden Book series. Well illustrated in color with clear, easy to understand instructions in many handicraft areas. Projects require little, if any, tools with materials that are inexpensive and easy to obtain.

Intermediate

Hunt, W. Ben. Indian Crafts and Lore. New York: Golden Press, 1954. 112pp.

One of the Golden Book series about how to make many interesting Indian articles. Illustrated in color with easy to

follow instructions that most elementary school children can understand.

Intermediate

Hyde, Margaret. Hobby Fun Book. New York: Seashore Press, 1952. 128pp.

This is a collection of carefully chosen, creative hobbies with pets, indoor gardens, modeling, painting, chemistry, electricity, and water.

Intermediate

Ickis, Marguerite. Arts and Crafts. New York: A. S. Barnes and Company, 1943. 309pp.

A group of suggestions presented for many of the common crafts areas. Chapter 1 concentrates on starting a craft program and has some fine illustrations of many of the essential tools.

Teacher Reference

Ickis, Marguerite. Handicrafts and Hobbies for Pleasure and Profit. New York: The Greystone Press, 1948.

This book contains many helpful suggestions and ideas for the teacher.

Teacher Reference

Ickis, Marguerite and Reba Selden Esh. The Book of Arts and Crafts. New York: Association Press, 1954. 275pp.

A collection of many ideas on most of the common craft areas such as leather, plastics, wood, clay, metal, paper, and textiles. It is unique in the fact that the book is based on five groups of human needs: Home, personal adornment, camps and playgrounds, little children, and special crafts for the individual. Ideas for projects, using inexpensive tools and materials for each of these needs, are fully described.

Teacher Reference

Ickis, Marguerite. Pastimes for the Patient. New York: A. S. Barnes and Company, Inc., 1945. 285pp.

Although primarily written as an aid for the bedridden, many useful activities that could be helpful to an elementary school teacher are clearly illustrated and discussed. One unique consideration of this book is that all of the activities can be done within a limited area with tools and equipment that are not difficult to handle.

Teacher Reference

Isenstein, Harald. Creative Claywork. New York: Sterling Publishing Company, 1960. 93pp.

Numerous illustrations show the hobby of clay work. Techniques are discussed with step by step directions. Geometric forms are discussed and forms from most elementary to difficult are presented.

Intermediate

Jackson, C. Paul. Tommy--Soap Box Derby Champion. New York: Hastings House, Publishers, 1963.

An excellent story about Tommy Murray's road to the All-American Championship of the soap box derby. Reference to respect of tools and good conduct in sports.

Intermediate

Jaeger, Ellsworth. Easy Crafts. New York: The MacMillan Company, 1952. 129pp.

A craft book especially helpful to persons looking for outdoor activities or nature crafts. Projects are such that very young children could do them, yet in most cases challenging enough for intermediate age boys and girls. The author includes easy to follow instructions with many illustrations.

Intermediate/Teacher Reference

Jaeger, Ellsworth. Nature Crafts. New York: The Mac Millan Company, 151. 128pp.

A craft book written with the intent of acquainting the student of nature with the many things that could be made from the natural materials easily found around him while in the woods. It could be most useful for elementary school children up to adult groups. Instructions and illustrations are included for each item mentioned.

Intermediate/Teacher Reference

Johnson, June. 838 Ways to Amuse a Child. New York: Harper & Bros., 1960. 216pp.

A presentation of many avenues of creative activities for children from ages six through twelve. Emphasis is on inexpensive tools and materials. Educational implications for such areas as crafts, hobbies, science,and nature are numerous.

Teacher Reference

Johnson, June. Home Play for the Preschool Child. New York: Harper and Brothers, 1960. 210pp.

Many creative craft ideas for the pre-school and kindergarten child are presented. The author includes activity ideas in such areas as painting, modeling, weaving, sewing, woodworking, cooking, and printing. Part II suggests many creative activities, such as hobbies, science experiments, and educational games for the child who is ready to accept new challenges.

Teacher Reference

Johnson, June. The Outdoor-Indoor Fun Book. New York: Harper & Brothers, 1961. 210pp.

A compilation of about seven hundred varieties of games and activities primarily set up as fun and play for

children six to twelve years of age. Many of the games and activities could be adapted to the elementary school classroom.

Teacher Reference

Jordan, Nina R. Holiday Handicraft. New York: Harcourt, Brace & Company, 1938. 245pp.

Book includes making things for all the important holidays. Items listed are easy and inexpensive to make. Children can understand the illustrations and instructions which are included with each of the ideas presented.

Intermediate/Upper

Kunn, Robert, 101 Toys Children Can Make. New York: Sterling Publishing Company, Inc., 1959. 124pp.

Describes 101 toys including ones for parties, farms, doll houses, transportation, target practice, musical, decorative, and useful. Illustrated, and full of ideas which could be extended to materials other than those described in the book.

Teacher Reference

Lawson, Arthur. Homemade Toys for Fun and Profit. New York: David McKay Company, 1953.

"Many plans and ideas for toys and equipment suitable for home or nursery school. Some ideas for father or cooperative nursery school parents."

Teacher Reference

Lee, Tina. Fun with Paper Dolls. Garden City, New York: Doubleday and Company, Inc., 1949. 64pp.

A book for young children interested in doing more than just cutting out paper dolls from the Sunday paper or cut-out book. The author clearly shows how to make paper dolls of all kinds, using simple instructions and lots of illustrations, many of which are in color.

Primary/Intermediate

Leeming, Joseph. Fun with Clay. Chicago: Spenser, 1944. 96pp.

A book that all beginners with clay will be interested in. Methods and designs for all types of modeling is included.

Intermediate

Lincoln, Martha and Katherine Torrey. The Worksnop Book for Parents and Children. Boston: Houghton Mifflin Company, 1955. 214pp.

A well illustrated book in two basic parts: (1) general problems of setting up physical facilities, emphasizing the fact that facilities need not be elaborate to be adequate; and (2) many activities that could be carried on in a simple workshop, starting with four or five year old children. Many ideas throughout.

Teacher Reference

Lopshire, Robert. How To Make Flibbers, etc. New York: Random House, 1964. 61pp.

Colorful, fun, easy directions, practical, enjoyable; a gook of 30 different ideas. There are games, growing a carrot garden, a sweet potato jungle, creative abstract art, an idea for music, printing with potato,and many ideas which lead to other ideas and application.

Good for a quick and enjoyable project. Materials are easily gotten and worked with.

Primary/Teacher Reference

Madden, Ira C. Creative Handicrafts. Chicago: Goodheart-Wilcox Co., Inc., 1955. 224pp.

A presentation of a complete course of instruction in elementary craftwork. This book provides a wide variety of project material, including detailed drawings, photograph design suggestions, outlines of correct tool usage,and suggestions for safety procedures. Encourages development of

leisure time hobbies and home workshop activities. The large type means easy readability.

Teacher Reference

Maginley, C. J. Make It and Ride It. New York: Harcourt, Brace and Company, 1949. 120pp.

A book of designs for wooden toys that children in the elementary school could make, ranging from the very simple orange crate toy to the more complex soap box racer. Each toy suggested includes a bill of material, procedure for construction,and a drawing of the pieces individually and assembled.

Intermediate/Teacher Reference

Mandell, Muriel and Robert E. Wood. Make Your Own Musical Instruments. New York: Sterling Publishing Company, Inc., 1957. 126pp.

A book for elementary school children including pictures and instructions for making many different kinds of musical instruments. It would be most useful to the elementary school teacher interested in making rhythm toys or starting a rhythm band in her classroom.

Intermediate

Manley, Seon. Adventures in Making. New York: The Vanguard Press, Inc., 1959. 180pp.

An introduction to the wonderful world of crafts and the wonder of creating. A book of discovery about things that have been made in the past with an attempt to allow the reader a chance to critically view some of the beautiful creations of many different craftsmen working with such materials as clay, wood, metal, paper,and thread.

Upper

Mannel, Elise. Sunset Craft Manual. San Francisco. Lane Publishing Company, 1946.

Makes many fine illustrated presentations in printing, stencil printing, pottery, ship carving,and hooked rugs.

Teacher Reference

Mattil, Edward L. Meaning in Crafts. Englewood Cliffs: Prentice-Hall, Inc., 1959. 133pp.

This book was written primarily for adults who work with children and who are interested in more than just the manipulation of materials to create an object. The author presents craft ideas intended to help develop excellent programs based on an understanding of the creative processes in elementary education. It is filled with many thought provoking and creative ideas, plus a good selection of illustrations.

Teacher Reference

McMullin, Margery D. How to Help the Shut-In Child. New York: D. P. Dutton and Company, 1954. 192pp.

Hints--313 of them--for boys and girls who need some indoor activities. A chapter for parents and then many hobbies and occupations, along with suggested ideas for things to make.

Teacher Reference

Moore, Frank C., Carl H. Hamburger, and Anna Laura Kingzett. Handicrafts for Elementary Schools. Boston: D. C. Heath and Company, 1953. 324pp.

The contents hold much useful information on organizing and administering a craft program in the elementary school. It would answer most questions one might have in regard to such a program. Various tools and materials are described, along with designs and patterns for many crafts.

Teacher Reference

Moore, Frank C., Carl H. Hamburger, and Anna Laura Kingzett. Make It Yourself. Boston: D. C. Heath and Company, 1955. 96pp.

An excellent book for project ideas and instructions for carrying them out. It is geared mainly toward the pre-school and primary grade level. The authors present full size patterns and detailed instructions and cover a wide area, from circus animals, doll houses,and aircraft, to ideas for holiday fun and objects from other lands. Most of the projects are in wood, paper, soap, or cork.

Primary/Teacher Reference

Morton, Alice D. Teach Me to Cook. New York: Hart Book Company, Inc., 1955. 128pp.

An excellent book for almost any age child. The instructions are simple and well illustrated, with each recipe on two facing pages, for easy readability. The author emphasized safety and does a fine job preparing the child for the art of cooking. Recipes move from the very simple, non-cooking type to more complicated types, such as preparing a meat loaf.

Intermediate

Murphy, Corinne, Alvin Lustig and Maurice Rawson. Exploring The Hand Arts. New York: Girl Scouts of the U. S., 1955. 118pp.

A book for the leader of a girl scout troop, written in such a way that it could easily be understood by anyone new to the area of arts and crafts. It discusses such important topics as resources, evaluation,and design. A fine presentation of most of the craft areas, including a bibliography of crafts books.

Teacher Reference

National Recreation Association. Nature Crafts for Camp and Playground. New York: National Recreation Association, Inc., 1953. 32pp.

A booklet of items that can be made from nature materials or from simple articles found about the house, to aid in the study of nature. The intent of the booklet is to

present some nature craft activities for children. An outline of a ten-week nature program is presented.

Teacher Reference

Newkirk, Louis V. and LaVada Zutter. Crafts for Everyone. Scranton: International Textbook Company, 1950. 210pp.

Designed for use in home workshops, summer camps, rehabilitation centers,or anyone interested in making gifts or projects in such craft areas as wood, metal, leather, plastics, textiles and paper. The projects suggested offer much opportunity for individual creativeness and do not require the use of expensive machines. Each project is clearly illustrated and includes complete information for construction.

Teacher Reference

Newkirk, You Can Make It. New York: Silver Burdett Company, 1944. 214pp.

A general crafts book presenting many project ideas for construction handwork. All the projects suggested can be made from inexpensive materials with the common hand tools that are usually available. Ideas are useful for children in the primary through upper elementary grades.

Teacher Reference

Newkirk, Your Craft Book. Scranton: International Textbook Company, 1947. 212pp.

Primarily set up to furnish the reader with ideas for projects in the many craft areas. The authors have taken pains to include ideas that require inexpensive tools and materials that could easily be purchased locally. Each project is well illustrated and has a complete step-by-step set of instructions.

Teacher Reference

Oliver, Rita N. Rain or Shine: Things to Make. New York: Harcourt, Brace and Company, 1954. 57pp.

An activity book filled with construction work. All of the projects suggested could be made from inexpensive tools and materials, many of which are usually found about the house. All the items presented could be made by children from the primary level up.

Teacher Reference

Otto, Henry J. Principles of Elementary Education. New York: Rinehart and Company, Inc., 1949. 430pp.

An elementary curriculum book that, along with general curriculum problems, takes a good long look at activities and their use in the elementary grades. Chapter nine deals specifically with some of the many aspects of activity that should be utilized by the elementary school teacher.

Teacher Reference

Parkhill, Martha and Dorothy Spaeth. It's Fun to Make Things. New York: A. S. Barnes and Company, 1941.176pp.

Much useful information on many of the common crafts. Through the use of illustrations and complete step-by-step procedures, many free or inexpensive materials become useful and interesting projects.

Intermediate

Peter, John (Editor). McCall's Giant Golden Make-it Book. New York: Golden Press, 1953. 157pp.

This book was compiled in an attempt to move children from a purely passive type of entertainment to much more fulfilling, active, creative play. It is filled with ideas of things to make for both young and older children. Many ideas are presented in simple and elaborate versions with accurate, full-size patterns and easy to understand, step-by-step instructions. Educational, whether utilized at home or at school.

 Teacher Reference

Powers, Margaret. A Book of Little Crafts. Peoria: The Manual Arts Press, 1942. 115pp.

The author endeavors to present to the reader forty possibilities for craft work that cost virtually nothing by way of tools or materials. She suggests that each activity can be done in a multitude of ways to add much variety. Although written about activities for small children, it would be most useful for the teacher interested in presenting challenging learning experiences to her class.

Teacher Reference

Randall, Grace A. Things to Make in Arts and Crafts. Darien, Connecticut: The Educational Publishing Corporation, 1947.

Paper bound book on paper constructions. Good illustrations and explanations.

Teacher Reference

Reynolds, H. Atwood. Low-Cost Crafts for Everyone. Garden City: Blue Ribbon Books, 1943.

Suggestions for a number of craft activities in the elementary grades.

Teacher Reference

Roberts, Catherine. Making Dolls and Doll Clothes. Garden City: Garden City Books, 1951. 191pp.

This book is a brief history of dolls and describes many ways of making both dolls and doll clothes. Clear, easy-to-follow instructions, and in many cases, patterns are presented in such a way they could be understood by an intermediate elementary school child. Teacher and pupil will find this book to be helpful in many ways. Intermediate/Teacher Reference

Roberts, Catherine. Real Book About Real Crafts. Garden City: Garden City Books, 1954. 223pp.

Pages contain many ideas of projects for construction with easy to follow instructions. A section on wood, woodworking tools, and how to use them is included. The emphasis of this writing is on objects that would have a "real" use for the person making them.

Intermediate

Robertson, Seonaid M. Creative Crafts in Education. Boston: Robert Bentley, Inc., 1958. 286pp.

The first six chapters deal with the thought and philosophy behind arts and crafts that might be presented in our schools from the elementary grades up, moving from a basic understanding of children to the value of crafts in adolescence. The remaining ten chapters concern themselves with the various areas of expression in crafts. Although many projects are suggested, the intent is to present philosophy and technique, leaving individual creative expression for the student and teacher.

Teacher Reference

Scharff, Robert. Handicraft Hobbies for Profit. New York: McGraw-Hill Book Company, Inc., 1952. 199pp.

A fine reference for the novice interested in the possibility of turning a hobby into profit. The author presents many hints and techniques for success in such an undertaking. Along with a bibliography and sources of supply, sales outlets for these products are listed by states.

Upper/Teacher Reference

Schneider, Dawn E. Correlated Art. Scranton: International Textbook Company, 1951. 196pp.

The elementary school teacher will find this a fine reference book of arts and crafts activities, dealing with many creative ideas in the area of social studies.

Teacher Reference

Shanklin, Margaret E. Use of Native Craft Materials. Peoria: The Manual Arts Press, 1947. 135pp.

The entire book is designed around the idea of nature craft materials such as straw, corn, grass, rush, clay, and others. Part of each chapter contains information about gathering and preparing these materials. Projects and ideas presented will lead to pleasure for the young craftsman as well as for an older child or adult. The last section of the book contains a good list of other craft references.

Teacher Reference

Sibley, Hi. 72 New Bird Houses, Feeders You Can Make. Chicago: The Goodheart-Willcox Company, Inc., 1957. 80pp.

An ideal book for the bird enthusiast or a class interested in studying more about various species of these animals. Designs, inside and opening dimensions for all kinds of bird houses, plus some photographs of the finished products are included in the text. Every page includes complete plans and specifications for each bird.

Upper/Teacher Reference

Van Dyke, Phyllis and Hilda LaQua Batterberry. Trails in Kindergarten. New York: Exposition Press, 1959. 62pp.

This book is written in an effort to use handicraft in its simplest possible form to help children in their reading readiness, as well as in rhythms and the association of numbers. It is filled with ideas to help the kindergarten teacher increase the readiness of the children in the above areas.

Teacher Reference

Wallace, Raymond. Backyard Things That Are Fun to Build. California: Wallace, 1958. 42pp.

A clear picture of each project is given without detailed and complicated plans, so the children can create

from imagination. It is an assortment of big things that boys love to build.

Intermediate

Wankelman, Willard, Philip Wigg, and Marietta Wigg. A Handbook of Arts and Crafts for Elementary and Junior High School Teachers. Dubuque: William C. Brown Company, Inc., 1961. 196pp.

This is basically an art book with many suggestions that could be considered as industrial arts activities. Part I offers some philosophy as to the value of creative development in the child and the philosophy a teacher must assume in her guidance. Part II relates unlimited creative possibilities for activities, as is well illustrated.

Teacher Reference

Willoughby, George A. General Crafts. Peoria: Charles A. Bennett Co., Inc., 1959. 144pp.

The author presents thoughts on what can be learned through a general crafts course, along with a floor plan for a crafts room. Gives basic information for most of the craft areas, and at the end of each unit gives a short, self-testing quiz. A little advanced for elementary children, but could be most helpful to the elementary school teacher planning such an activity program.

Teacher Reference

Yolen, Will. Young Sportsman's Guide To Kite Flying. New York: Thomas Nelson & Sons, 1963. 92pp.

A book about the background of kites and the part kites have played in science and sport. Numerous illustrations, glossary, and where to buy kits to build kites are included. Skip fishing and kite fishing are explained in detail.

Upper

Zarchy, Harry. Let's Make A Lot of Things. New York: Alfred A. Knopf, Inc., 1948. 156pp.

Contains many ideas for projects in some of the craft areas. The first part of the text discusses pertinent information about the materials that might be used. The second section deals with the possibilities of what to make in jewelry, metalwork, clay,and leather.

Intermediate

Zarchy, Harry. Creative Hobbies. New York: Alfred A. Knopf, 1953. 299pp.

A book for the young person who would like to start a hobby but has no idea where to begin. The author suggests that a real hobby involves the person in the entirety; therefore he suggests activities that are more of the constructive rather than the observation type. Many excellent suggestions for hobbies in such areas as plastics, silk screen printing, bookbinding, whittling, papercraft, shellcraft, lampmaking, stagecraft,and woodcarving.

Intermediate

Zarchy, Harry. Here's Your Hobby. New York: Alfred A. Knopf, 1954. 233pp.

A book designed to get people interested and started in the art of a hobby. It is written and illustrated in a way that young people can read and understand. There are suggestions for all kinds of hobbies from collections to home repair, as well as photography, painting,and archery to mention only a few. A section called "Hobby Bookshelf," is most helpful in suggesting other reading material for all the hobbies mentioned.

Intermediate

Zarchy, Harry. Let's Make More Things. New York: Alfred A. Knopf, Inc., 1943. 158pp.

A well illustrated, easy to read book that would be most useful for the inexperienced as well as the experienced craftsman or pupil. A fine list of tools is presented, along with the techniques of their proper usage. A good elementary school book filled with many ideas for projects that are inexpensive to make, with materials easy to obtain.

Intermediate

Zarchy, Harry. Let's Make Something. New York: Alfred A. Knopf Inc., 1941. 158pp.

An excellent book for the elementary school, done in a simple yet interesting way. The author familiarizes the reader quickly and easily with the everyday tools and their uses. He illustrates simply and clearly how and what could be created with materials that are easily obtained. Written in such a way that it is most useful for both teacher and pupil.

Intermediate

HEAT

Adler, Irving. Heat. New York: Day, 1964. 48pp.

The author explains the kinds and uses of heat. Examples would be thermodynamics and heat of the sun.

Intermediate

Adler, Irving. Hot And Cold. New York: Day, 1959. 127pp.

In this book the author explains the puzzle of heat and cold. It describes experiments and devices and theories of temperature.

Upper

Feravolo, Rocco. Junior Science Book of Heat. Champaign, Illinois: Garrard Publishing Company, 1964. 63pp.

This book tells what heat is, where it comes from, how it travels, how it is measured, and what it can do. Many experiments, using easily available materials, help to explain these things.

The first fires and fuels for fires are included. The parts that fire, fuel, electricity, and the sun play in making heat are demonstrated by simple experiments. Index. Large type and labeled illustrations.

Intermediate

Munch, Theodore. What Is Heat? New York: Benefic, 1960. 42pp.

Motion, energy, and heat are presented in easy to understand text and colorful pictures.

Primary

Parker, Bertha. Thermometers. New York: Row, Peterson, 1942. 36pp.

Different types of thermometers are shown as as the changes that take place from hot to cold.

Primary

Sootin, Harry. Experiments With Heat. New York: W. Norton & Company, 1964. 87pp.

More than fifty experiments into the basic natu of heat are provided. Each experiment can be carried ou at home with simple, inexpensive equipment than can be purchased in hardware stores. Accompanying each expe are explanations of the principles and scientific history b it. Detailed illustrations. Index. Glossary. Further re list.

Intermedi

Williams, Jay. Danny Dunn and The Heat Ray. New Yor McGraw-Hill, 1962. 144pp.

Danny Dunn has an adventure with a laser (heat He sells a millionaire on the usefulness of the heat ray..

Upper

HOUSES

Adler, Irving. Houses. New York: Day, 1964. 47pp.

This book tells the story of house from caves to apartment houses.

Primary

Burns, William. A World Full of Homes. New York: McGraw-Hill, 1953. 118pp.

This book follows people to see how they learn to find a place to live, new materials, tools, inventions, and ideas about how to live. Unusual homes discussed are caves, trees, grass, sod, mud, brick, stone, and wood houses.

Upper

Burton, Virginia. The Little House. Boston: Houghton-Mifflin, 1950. 40pp.

A small country house watches the city move in around her. The grandchildren of her original owners find the little house and move her back to an area of farmland.

Primary

Carter, Katherine. The True Book of Houses. Chicago: Children's Press, 1957. 45pp.

This is a picture book of houses all over the world.

Primary

Case, Bernard. Story of Houses. New York: Sterling, 1957. 48pp.

A story of the different kinds of shelter man has built as protection against outside forces. The houses differ because of the climate and terrain of the country.

Primary

Colman, Hila. Peter's Brownstone House. New York: Morrow, 1963.

Grandpa tells Peter how the city used to be without fire engines, running water, automobiles, boat docks, and electric lights. Peter learns to be proud that he lives in a house instead of an apartment.

Primary

Hansen, Hans Ole. I Built A Stone Age House. New York: Day, 1959. 78pp.

The author, interested in the stone age, built a house using the tools and materials appropriate to that era. Many pictures illustrate the text.

Primary

Hoag, Edwin. American Houses. New York: J. B. Lippincott, 1964. 153pp.

A history of homes from first shelter known to man to today's lunar ambitions. Numerous illustrations covering different architecture from all over the world. Discusses how homes reflect the people who live in them.

Upper

Lenski, Lois. Let's Play House. New York: Henry Z. Walch, Inc. 18pp.

This short story is about Molly, Polly, and Peter who seem to be of different backgrounds playing house with dolls, and the different experiences involved in tending house. Good illustrations.

Primary

Liang, Yen. The Skyscraper. New York: J. B. Lippincott Company, 1958. 48pp.

A fine picture story about some of the steps necessary to build our large skyscrapers of today.

Primary

Mason, Margaret. How Do You Build A House? New York: Sterling, 1953. 60pp.

This book shows the steps in constructing a house.

Primary

Robbin, Irving. The How & Why Wonder Book of Caves to Skyscrapers. New York: Grosset & Dunlap, 1963. 43pp.

This book helps us understand man's progress in improving his home through the sweep of time.

Intermediate

Schulz, Clare Elmore. Willy Weep The Chimney Sweep. New York: Double Day & Co., Inc., 1964. 45pp.

Colorful book with pictures on every page, color pictures every two pages. The print is large. The story is a good follow-up to the study of heat, fire, etc. There are poems through the story which make it light and enjoyable. Pure enjoyment or a lead to types of homes and heat.

Primary

Smith, Evelyn E. and H. Lawrence Hoffman. The Building Book: About Houses the World Over. New York: Howell, Soskin Publishers, 1947. 79pp.

Relates many interesting facts about people around the world and the different types of homes lived in, and why. The author moves from the early primitive type shelters to modern architecture without getting too technical. Some pictures are included, but not as many as there might be.

Intermediate/Upper

Wills, Rayal. Tree Houses. Boston: Houghton-Miffiin, 1957. 67pp.

Information and instructions for building all kinds of tree houses are given, and there is a summary of common tools to use in your construction.

Upper

Wise, William. The House With The Little Red Roof. New York: Putnam, 1961. 47pp.

Jimmy finds that adjusting to a new home and friends is not as hard as he thought it might be.

Primary

Zim, Herbert S. Things Around The House. New York: William Morrow and Company, 1954. 32pp.

An explanation of the many everyday objects inside the home, such as the toilet, doorbell, stove, furnace, and faucets. Too often these conveniences are taken for granted; therefore an attempt is made to show youngsers how they function to serve us. Each of the devices mentioned is illustrated in color with X ray or cutaway views.

Primary/Intermediate/Upper

INDUSTRIAL ARTS

AIAA. Industrial Arts Technology-Past, Present, and Future. Washington, D. C.: 1967. 327pp.

This is the collection of speeches given at the 1967 AIAA Convention. Areas of special interest: Arthur Stunard's "Curriculum Resources" on page 55, Wesley Perusek's "elementary School Industrial Arts" on page 148, and Elizabeth Hunt's "The Institute of Technology for Children" on page 224.

Teacher Reference

American Council on Industrial Arts Teacher Education. Planning Industrial Arts Facilities. Bloomington: McKnight & McKnight Publishing Co., 1959. 247pp.

A consideration of philosophy pertinent to planning adequate industrial arts facilities. Includes information of needs for an elementary school program, plus plans for a separate room or portable tool carts and work benches for classroom activities. Such important topics as planning for the future, lighting, painting, floors and safety, heating and ventilation, and control of noise are considered.

Teacher Reference

American Vocational Association. Industrial Arts in Education. A statement by the Industrial Arts Policy and Planning Committee. Washington, D. C.: American Vocational Association, Undated. 11pp.

A booklet prepared for the purpose of clarifying four main topics dealing with industrial arts: (a) definition; (b) unique contributions; (c) basic areas; (d) emphasis by level. Page 5 presents K-6 as one of the levels of industrial arts education, and briefly describes the program in the elementary grades.

Teacher Reference

Ericson, Emanual E. Teaching the Industrial Arts. Peoria: Charles A. Bennett Co., Inc., 1956. 384pp.

A book primarily written to help in-service and future industrial arts teachers in understanding some of the problems and procedures they might encounter in their teaching. The elementary teacher would find this book helpful in trying to acquire knowledge and skill in teaching groups of children industrial arts activities by providing information about shop methods and organization that could easily be transferred to classroom procedures.

Teacher Reference

Feirer, John L. Drawing and Planning for Industrial Arts. Peoria: Charles A. Bennett Company, Inc., 1956. 376pp.

An excellent general drawing book written for the junior high school level. The author covers the field of applied drawing in an attempt to help people learn how to make and use drawings. Most helpful in such important drawing techniques as sketching, designing, planning and the difference between perspective, isometric and working drawings. Easy to follow and understand with many illustrations.

Teacher Reference

Gaitskell, Charles D. Children and Their Art. New York: Harcourt, Brace, and Company, 1958. 446pp.

Although an elementary art text book, much of the philosophy discussed could easily carry over to present-day industrial arts thinking. The author provides insight into the growth of the child in art experiences at various age and developmental stages. Many of the suggested activities could well be considered industrial arts for the elementary school and could be integrated into the elementary school curriculum.

Teacher Reference

Illinois, State of. Industrial Arts in Grades Seven and Eight. Springfield: Board of Vocational Education. July, 1953. 104pp.

A curriculum guide written with the idea of presenting some philosophy and objectives of an industrial arts program at the seventh and eighth grade levels. The elementary teacher will find this publication useful in determining some of his own objectives, as well as lists of tools and processes most helpful to children. A partial list of sources of supply and a good selected bibliography are included.

Teacher Reference

Illinois, State of. The Industrial Arts General Shop. Springfield: Board of Vocational Education, September, 1950. 102pp.

A curriculum guide written with the primary purpose of helping small schools establish an industrial arts program in the junior or senior high school. Although not specifically for elementary school use, many helpful suggestions for the elementary teacher could be derived on such important issues as organization, equipment, and materials. A bibliography listed by various industrial arts areas is included.

Teacher Reference

Lindbeck, John R., and others. Basic Crafts. Peoria: Chas. A. Bennett Co., Inc., 1969. 274pp.

This book brings together a number of craft activities involving several different areas; metals, graphics, plastics, woods, leather, and ceramics. Each section contains a treatment of the basic tools and materials involved, along with a discussion of methods of employing these materials creatively. There are introductory units on design, measurement, sketching, and safety which are fundamental to all areas.

Teacher Reference

Newkirk, Louis V. and William H. Johnson. The Industrial Arts Program. New York: The Macmillan Company, 1948. 357pp.

An attempt is made to show the continuity of industrial arts from grade 1 through 12 by presenting a program that encompasses these limits. Some general philosophy is established in the first chapter, and successive chapters deal with: grades one to three, grades four to six, grades seven and eight, junior high school, and senior high school.

Teacher Reference

Olson, Delmar. Evolution of Industrial Arts. New Jersey: Prentice-Hall, 1963. 367pp.

This book is a proposal for a new industrial arts. It is a discussion on subject matter, facilities, and functions.

Teacher Reference

Olson, Delmar. Industrial Arts and Technology. New Jersey: Prentice-Hall, 1963. 365pp.

This book is an attempt to place today's industrial arts within the context of today's technology. It tries to combine idealism and materialism.

Teacher Reference

Point of View Elementary School Industrial Arts. New Britain, Connecticut: Stanley Tools, Educational Department, June, 1959. 11pp.

The material presented in this booklet was originally prepared by the Los Angeles City Schools and presents some fine points on elementary industrial arts. The booklet includes some basic philosophy, lists of tools and materials for primary and upper elementary grades, plus plans for some small projects and a tried and tested "tool truck."

Teacher Reference

Schmitt, Marshal L. State Curriculum Guides for Industrial Arts 1941-1958. United States Dept. of Health, Education, and Welfare Circular Number 567. Washington 25, D. C.: Office of Education, Undated. 33pp.

An annotated bibliography of available curriculum guides, from forty-nine states plus the District of Columbia, Hawaii and Puerto Rico. State supervisors of industrial arts consultants, or persons most responsible for the programs, identified the various guides. The curriculum guides are listed alphabetically by state.

Teacher Reference

Schmitt, Marshal L. and Albert L. Pelley. State Curriculum Guides for Industrial Arts 1951-61. United States Department of Health, Education, and Welfare Bulletin 1962, Number 16. Washington 25, D. C.: Government Printing Office, 1962. 23pp.

This booklet updates the original annotated bibliography published in 1958 and includes only guides dated 1951-1961. Persons most responsible for the industrial arts programs identified the guides. Many of the materials listed deal with the elementary school program. All states that have materials available are listed in alphabetical order.

Teacher Reference

Scobey, Mary-Margaret. Exploring the Way Things are Made. Chicago: Scott, Foresman & Company, 1960.

"A how-to-do-it book, presenting the emerging concept of industrial arts for the elementary school and specific directions for organizing the construction period and for reproducing many processes.

Teacher Reference

Stombaugh, Ray. A Survey of Movements Culminating in Industrial Arts Education in Secondary Schools. New York: Bureau of Publications, Teachers College, Columbia University, 1936. 192pp.

A study dealing with industrial arts movements in the United States from 1871. Although primarily set up to study the secondary school industrial arts movements, the author mentions the role elementary school industrial arts played in the early development of this area. It could be very useful for the elementary teacher interested in some historical background.

Teacher Reference

Williams, Walter R. Exploring the Arts and Industries. Scranton: International Textbook Company, 1940. 275pp.

A book probably intended for the junior high school level, containing much general information that is valuable background information for the elementary teacher interested in surveying the many industries of our country. Descriptions of materials and processes of each industry mentioned are included.

Teacher Reference

INDUSTRY

Adamson, Gareth. Harold the Happy Handyman. Irvington-on-Hudson, New York: Harvey House, 1968.

A humorous picture book account of a handyman, who would mend almost anything.

Primary

Baker, Eugene and Downing, Joan. Workers Long Ago. Chicago: Children's Press, 1968.

Verses and pictures describe eleven busy people and the way they worked before they had machines to help them.

Primary

Elting, Mary and Margaret Gossett. The Lollypop Factory-And Lots of Others. Garden City: Doubleday and Company, Inc., 1946. 95pp.

A look into many factories that children would be especially interested in, such as pencil, doll, ice cream, and lollypop factories. Written as a picture story book; illustrated in color.

Primary

Keliher, Alice V., (editor) Household Workers. New York: Harper and Brothers, 1941. 56pp.

A well illustrated book that attempts to acquaint upper elementary and junior high school children with the many tasks of household workers with implications for a future vocation. This book could serve in the study of community helpers in the lower grades as well.

Upper

Maher, John E. and Symmes, S. Stowell. Ideas About Others and You. New York: Franklin Watts, Inc , 1969.

The story of our economic system which produces the things we want.

Primary

Perry, Josephine, The Chemical Industry. New York: Longmans, Green and Company, 1944. 128pp.

Intended as a survey of the American chemical industry. The author first sketches the history of chemistry from its use in ancient Egypt to the present and also offers a background for a scope of the field today as well as a glimpse into the future. Well illustrated.

Upper

Perry, Josephine, The Cotton Industry. New York: Longmans, Green and Company, 1943. 128pp.

Written to give a non-technical understanding of the cotton industry from its early beginning to the by-products it produces today. Due to its importance in American history, much reference to the processes involved in manufacturing cloth is included. Many illustrations to aid in clarifying the subject.

Upper

Terrell, John Upton. The U. S. Department of Labor. A Story of Workers, Unions and the Economy. New York: Meredith Press, 1968.

A history of the U.S. Department of Labor and description of its duties, problems, and responsibilities.

Upper

INVENTIONS

American Heritage. Men of Science & Invention. New York: American Heritage, 1960. 153pp.

Excellent illustrations of technological and scientific advances made in America from colonial times on are blended with good background material.

Intermediate/Upper

Beatyy, Jerome Jr. Bob Fulton's Amazing Soda-Pop Stretcher. New York: William R. Scott, Inc., 1963. 240pp.

A fiction in the area of science. Bob discovers an ingredient that eliminates friction. Spies become involved in order to steal the formula. An adventuresome story for upper elementary and/or junior high.

Intermediate

Bonner, Mary. Wonders of Inventions. New York: Lantern Press, 1961. 125pp.

Inventions of great significance and their consequences to the world at that time are illustrated in the text.

Upper

Chandler, M. H. Man the Inventor. Chicago: Rand McNally & Company, 1964. 90pp.

This is an excellent book describing man's inventive contributions from earliest to present day. It is a good reference book for children and teachers, and has wonderful illustrations.

Upper

Compere, Mickie. Story of Thomas Alva Edison, Inventor. New York: Four Winds Press, 1964. 64pp.

This book tells in large print the life of Thomas Edison, the inventor. Compere presents how Edison discovered and experimented. The pictures are large. The story is presented in an interesting manner for that age level.

Primary

Cooke, David C. Inventions That Made History. New York: G. P. Putnam's Sons, 1969.

Here are thirty-two inventions that have revolutionized the course of human life, from printing to the development of the laser.

Intermediate

Cousins, Margaret. The Story of Thomas A. Edison. New York: Random House, 1965. 176pp.

Cousins presents the history of Edison's inventions--light, phonograph, electric locomotive, radio broadcasting, and motion pictures. The diagrams are pictures, photographs, and maps. The print is large.

Intermediate

Yates, Raymond. The Young Inventor's Guide. New York: Harper, 1959. 105pp.

There are chapters on how the young reader can prepare himself for a career as an inventor, on how to decide if an invention is practical, and on simple inventions of the past.

Intermediate

LEATHER CRAFT

Mannel, Elise. Leathercraft Is Fun. New York: Bruce, 1952. 94pp.

This book should be especially helpful to leaders of craft groups. All of the projects are easy enough for children to make.

Teachers Reference

Zimmerman, Fred. Leathercraft. Chicago: Goodheart-Willcox, 1961. 96pp.

This book will acquaint you with the tools, terms, and procedures of carving and stamping leather.

Upper

LIGHT

Beeler, Nelson. Experiments With Light. New York: Crowell, 1957. 143pp.

An important book for suggestions concerning science fairs and extracurricular activities in the field of light.

Upper

Corbett, Scott. What Makes a Light Go On? New York: Little, Brown & Company, 1966. 56pp.

Book describes where electricity comes from to light a bulb in easy to understand language. Also tells what happens in the wires and in the bulb itself.

Upper

Farguhar, Margaret. Lights. New York: Holt, Rinehart, Winston, 1960. 46pp.

This text tells about the procession of lamps and lighting devices from the torches used in caves to the fluorescent lamps of today.

Intermediate

Feravolo, Rocco. Junior Science Book of Light. Illinois: Garrard, 1961. 60pp.

This book is a general book about the importance and mysteries of light. Some of the topics are shadows, bending light rays, colors, and lenses.

Intermediate

Gates, Arthur. Keepers of The Lights. New York: Macmillan, 1960. 33pp.

The lighthouse keeper has an important job of guiding ships away from the rocks and shore. This book describes the inside of the lighthouse and how the light works.

Intermediate

Freeman, Ira. Light & Radiation. New York: Random House, 1965. 142pp.

Well illustrated book on many aspects of light explained in non-technical way. Glossary and discussion about inventions clarify certain difficult concepts.

Upper

Harrison, George R. The First Book of Light. New York: Watts, 1962. 83pp.

The author attempts to answer many questions about warmth, growing things, the source of light, and travel and reflection of light.

Upper

Herbert, Don. Beginning Science With Mr. Wizard: Light. New York: Doubleday, 1960. 32pp.

This text deals with the various properties of light and its many uses.

Upper

Highland, Harold. The How and Why Wonder Book of Color and Light. New York: Grosset and Dunlap, 1963. 48pp.

A text about light and color with a number of experiments to guide the reader in making discoveries.

Upper

Klein, H. Masers & Lasers. New York: Lippincott, 1963. 184pp.

The book discusses the construction and uses of masers and their even more amazing younger relatives, the lassers. It is an excellent survey of modern physics from Newton through today.

Upper

Munch, Theodore W. What is Light? New York: Benefic, 1960. 42pp.

This book explains many of the scientific principles of light and its behavior.

Intermediate

Pine, Tillie S. Light All Around. New York: Wittlesay, 1961. 47pp.

An easy to read approach to the properties of light. This book introduces the reader to color, reflection, shadows, etc.

Intermediate

Shapp, Martha. Thomas Alva Edison. New York: Watts, 1966. 59pp.

This book follows Tom from his early childhood to his days of inventions. There are many pictures and the print is large.

Primary/Intermediate

MACHINES

Adler, Irving. Machines ew York: Day, 1964. 47pp.

The author explains simple machines and how they work. It continues on to electric power, mass production, and automation.

Intermediate

Atteberry, Pat. Power Mechanics. Chicago: The Goodheart-Wilcox Company, Inc., 1961. 94pp.

This book shows how power machines affect you and shows the development of power heat engine operating principles and how jets and rockets work. Wonderful illustrations and photographs and a good dictionary of terms.

Upper

Buehr, Walter. The First Book of Machines. New York: Franklin Watts, Inc., 1962. 49pp.

Beginning with a pioneer background, the author develops simple machines, complex machines, their uses from the inclined plane through "thinking" machines. There are two color pictures frequently through the book. Both table of contents and index are included. Comparisons of modern use. Early days occur frequently. A good beginner and organization source.

Intermediate

Dines, Glen. The Mysterious Machine. New York: Macmillan Company, 1957. 1 0pp.

It is the story about a boy scientist and his problems of people accepting his invention.

Intermediate

Elting, Mary. Machines At Work. New York: Harvey House, 1962.

A pictorial with text about all kinds of machines that help man do his work. It talks about machines that dig, hammer, push, pick corn, etc.

Primary

Greene, Carla. I Want To Be a Mechanic. New York: Children's Press, 1959.

The intention of this book is to encourage independent reading and to provide a better understanding of the mechanics around us.

Intermediate

Parker, Bertha. You as a Machine. New York: Row, Peterson, 1958. 36pp.

The author compares the workings and needs of the human body with that of a machine.

Intermediate

Pine, Tillie. Simple Machines and How We Use Them. New York: McGraw-Hill, 1965. 48pp.

Using the six simple machines, the author has shown the young reader how work is made easier.

Intermediate

Schneider, Herman. Everyday Machines and How They Work. New York: McGraw-Hill Book Company, Inc., 1950. 192pp.

A presentation of some insight into the workings of dozens of household machines. Written simple enough for the elementary school child to understand and yet offers much to the unknowing adult faced with minor repair problems. Well illustrated and animated to make for easy and interesting reading.

Intermediate/Upper

Sharp, Elizabeth N., Simple Machines and How They Work. New York: Random House, 1959. 83pp.

A fine, simplified explanation of the many simple machines. The print is large for easy reading, with an explanatory picture on almost every page. The text is written in easy to understand language and would prove as good supplementary reading for the science unit on simple machines.

Intermediate/Upper

Slepian, Jan. Alfie and the Dream Machine. Chicago: Follett Publishing Company, 1964.

The "listen-hear" books provide teachers and parents with an entertaining and simple method of speech improvement. This is an imaginative and enjoyable story.

Intermediate

The Boy Mechanic. New York: Simon & Schuster, 1952. 312pp.

A compilation of many projects for almost every occasion. The projects are divided into five main groups: (1) Models, (2) Projects for the Great Outdoors, (3) Indoor Crafts, (4) The Boy Scientist, (5) Toys for Sis and Little Brother Each project presented has pictures and complete easy-to-follow instructions on how to make it.

Intermediate/Upper

Victor, Edward. Machines. Chicago: Follett Publishing Co., 1962, 32pp.

Well illustrated book of simple machines. Included is a vocabulary list in the back.

Intermediate/Upper

Williams and Abrashkin. Danny Dunn and The Homework Machine. New York: Whittlesey House, McGraw-Hill Book Co., 1958. 141pp.

The story about a boy and his adventures with a computer.

Intermediate

Zaffo, George. Big Book of Real Building and Wrecking Machines. New York: Grossett, 1951. 25pp.

Full page pictures and an easy to read text. Large machines used in construction work are features.

Primary

MAGNETS

Adler, Irving. Magnets. New York: John Day Co., 1966. 48pp.

This book is a concise explanation of the reaction of magnets--both man-made and natural. It explains the atoms in different magnetic materials and shows some experiments. There is an index of terms. The diagrams are simple and yet complete. This would be beneficial as a supplementary science book.

Intermediate

Feravolo, Rocco. Junior Science Book of Magnets. Champaign, Illinois: Garrard Press, 1960. 64pp.

Tells what a magnet is, how it works, and how it has changed our world. Several experiments with simple instructions.

Upper

Keen, Martin. The How And Why Wonder Book of Magnets And Magnetism. New York: Grosset & Dunlap, 1963. 48pp.

Concepts of the nature of magnetism, earth as a magnet, electromagnetism, electromagnets in use, and magnets in communication are developed. Colorful illustrations, easy text, and easy experiments are at a child's level.

Intermediate

Knight, David. Let's Find Out About Magnets. New York: Franklin Watts, Inc., 1967. 55pp.

This book describes the Greek source is found in lodestone. Description of various kinds of magnets and pictures are included. David Knight gives experiments and practical applications of many uses eg., close refrigerator door.

Pictures are on every other page and done in two colors.

Intermediate

Pine, Tillie S. & Joseph Levine. Magnets And How To Use Them. New York: McGraw-Hill Company, 1958. 47pp.

This book is introduced with questions to be solved, e.g., "What part of the magnet is the strongest?" It then, through experiments on every page, explains and illustrates the answers. There are pictures on every page combining red, black, and white. The experiments could be useful in primary grades, though reading could extend into the intermediate grades. There is treatment of practical uses for magnets in the home.

Intermediate

Podendorf, Illa. The True Book of Magnets and Electricity. New York: Children's Press, 1961. 47pp.

This book shows the young reader the relationship between electricity and magnets and their uses.

Intermediate

Reuben, Gabriele. What Is A Magnet? Chicago: Benefic Press, 1959.

Magnets are explained in full. Several experiments that would interest children are illustrated and explained.

A picture dictionary in the back is interesting.

Intermediate

Yates, Raymond F. The Boy's Book of Magnetism. New York: Harper Brothers, 1941. 161pp.

A delightful book telling about magnets and numerous experiments and games using magnets. Many illustrations included showing how to construct games which would keep children occupied for hours and involves great skill in some.

Show close relationship of magnetism and electricity, building an electromagnet.

Intermediate

MAPS

Branley, Franklin M. North, South, East, and West. New York: Thomas Y. Crowell, 1966.

This bock defines the points of the compass and relates them to everyday life for the young explorer. The author shows that learning to tell directions can be fun. Boys and girls can trace their shadows, following his clear instructions, and learn to locate east and west. Reading a map and using a compass are introduced. Illustrated. Easy-to-read text.

Intermediate

Epstein, Sam. First Book of Maps & Globes. New York: Watts, 1959. 63pp.

It introduces different kinds of maps and their uses from road maps to nautical charts.

Intermediate

Fisher, Irving. World Maps & Globes. New York: Essential Books, 1944.

Qualities of good map projection s are discussed along with map distortions. Triangular grids, and longitude - latitude.

Teacher Reference

Hammond & Company. The First Book of Atlas. New York: Watts, 1960. 96pp.

Maps of states, islands, and continents all over the world picture rivers, streets, and products produced in each.

Intermediate

Hathway, James A. Maps and Map-making. New York: Golden Press, 1966. 57pp.

This book begins with a history of maps and map-making. It describes the various measurements man has devised for measuring distance--the pace, the league, the inch-foot-mile system, the Metric System,and others.

Different projections used by map-makers to picture the earth are described and pictured. Samples of the military, political, product, road, and weather maps are shown in the illustrations. Also pictured are some of the symbols used in making topographic maps. Colored illustrations. Index.

Upper

Raisz, Erwin. General Cartography. New York: McGraw-Hill, 1948. 354pp.

The history of maps, discussion of scales and projections and directions for lettering and composing maps makes this book a good reference for teachers.

Teacher Reference

Raisz, Erwin. Mapping The World. New York: Abeland-Schuman, 1956. 111pp.

The history of maps and map-makers, up to the modern-day map makers.

Upper

Rinkoff, Barbara. A Map Is A Picture. New York: Crowell, 1962. 36pp.

The author describes different types of maps: town, state, country, and world. Then she explains how to make a detailed map of your neighborhood.

Intermediate/Upper

MATHEMATICS

Adler, Irving. The Tools of Science. New York: Day, 1958. 128pp.

This is a review of the kinds of tools used by scientists. It moves from pendulums to the synchrotron.

Upper

Barr, Donald. Arithmetic for Billy Goats. New York: Harcourt, Brace, & World, Inc., 1966. 108pp.

Barr presents a story about Billy Goat to show confusion in counting with numbers. He shows how names "one," "two," etc. are useful. Then the author develops multiplication and division in story form. The reading level is Intermediate, but the understanding would need guidance of a teacher. The print is average size of black and white illustrations. This is a good supplementary arithmetic book for a gifted child.

Intermediate

Bendick, Jeanne. Take Shape, Lines, and Letters. New York: Whittlesay, 62. 78pp.

A bridge of mathematical ideas stretching from the ancient Greeks to the mathematicians of today is explained to the reader. Mathematics in art, music, and everyday life are a few of the areas touched upon.

Intermediate

Eichenburg, Fritz. Dancing In The Moon. New York: Harcourt, Brace & World, Inc., 1955.

Numbers to 20 different animals performing in a delightful way. Animals should be loved by the children. Excellent for teaching names of animals.

Primary

Feravolo, Rocco. Wonders of Mathematics. New York: Dodd. Mead & Company, 1963. 64pp.

"The story of mathematics--from early Egyptian and Greek numbers to the usefulness of decimals and fractions interspersed with simple activities and problems for the young reader to try on his own."

Intermediate

Francoise. Jeanne-Marie Counts Her Sheep. New York: Charles Scribner's Sons, 1951. 30pp.

This story is about a little girl who plans what would happen if her sheep, Patapon has one-up-to ten sheep. Counting is done through the story and the source of wool is emphasized.

Colorful pictures on every other page; large print.

Primary

Gardner. Archimedes. New York: The Macmillan Company, 1965. 4111.

This delightful book tells the story of the life and work of that ancient Greek mathematician, scientist, and inventor. Illustrated.

Upper

Kenyon, Raymond G. I Can Learn About Calculators and Computers. New York: Harper and Brothers, 1961. 112pp.

A good book relating the ins and outs of the ever fascinating calculators and computers. It would be excellent reading for the more advanced mathematics student. The author provides plans and procedures for construction of several different kinds of simple computers that most boys would be able to follow.

Upper

Land, Barbara. The Quest of Isaac Newton. New York: Garden City Books, 1960. 56pp.

The authors treat Isaac Newton by telling of his light ray experiment first. Then the book relates Newton's Scientific Method. His laws are treated briefly giving examples of use today, of his failures, his struggles, his quiet nature. There are illustrations on almost every page.

Intermediate

Myller, Rolf. How Big Is A Foot? New York: Atheneum, 1962. 30pp.

A good introduction to measuring, showing one way to determine a foot length. The book is done in red and white with a picture on each page. It is the story of a king who wanted to give the queen a bed for her birthday. It relates the difficulty the apprentice with small feet had when he measured for the bed because the king's feet were big.

Primary/Intermediate

Prochaska, R. C. Mathematics: The Language of Science. New York: G. P. Putnam's Sons, 1961. 72pp.

Author's main point is that mathematics is the handy and precise language that scientists use to express relationships and make comparisons between very different things. Tells how our civilization developed its counting system, the beginnings of geometry. Helpful diagrams and pictures.

Intermediate

Ravielli, Anthony. An Adventure in Geometry. New York: Viking, 1957. 117pp.

The purpose of this book is to stimulate interest in geometry by relating its form to the beauty of nature. The drawings and diagrams are the outstanding features of the book.

Upper

Razzell, Arthur G. and Watts, K. G. O. Three and the Shape of Three. Garden City, New York: Doubleday and Company, Inc., 1968.

The British authors take the number three and change it into a fascinating intellectual idea.

Upper

Russell, Solveig Paulson. Lines and Shapes: First Book of Geometry. New York: Henry Walck, Inc., 1965. 31pp.

A brief description of well-known shapes and lines in daily life. Accompanied by black and white drawings.

Upper

The Amazing Story of Measurement. Saginaw: The Lufkin Rule Co., 1953.

"A very interesting, informational, historical treatment of the development of measurement in various countries, presented in comic book form."

Intermediate/Upper

METALS

Benedict, Bart. Aluminum. Menlo Park, California: Lane Book Co., 1961. 65pp.

A book describing the very interesting and relatively new process of aluminum manufacturing. Author describes what this metal is, where it can be found, what ore it comes from and how it is made. Written and well illustrated in such a way as to hold the interest of the young reader, and at the same time present to him the answers he wants to know. A most valuable section could be the one on, "Do-it-yourself experiments."

Intermediate

Bollinger, J. Fun with Metalwork. New York: Bruce Publishing Co., 1958. 184pp.

This text supplies a whole avenue of new shop project designs and ideas. There is a large section devoted to silhouettes.

Upper

Boy Scouts of America. Metalwork. New Jersey: Boy Scouts of America, 1966.

The mining and refining of metal is followed by benchwork projects and tin can crafts.

Upper

Boyd, Gardner. Metalworking. Chicago: Goodheart-Wilcox, 1961.

This book includes information on planning, designing, safety, bench and sheet metal. Hand tool operations are stressed.

Teacher Reference

Brindze, Ruth. The Story of Gold. New York: Vanguard, 1955. 64pp.

Several independent stories are combined to give the history and uses of gold. The stories are arranged in time sequences from cave man to gold brick storage in Fort Knox.

Upper

Davis, Lavinia R. Adventures in Steel. New York: Modern Age Books, Inc., 1938. 166pp.

A story about people involved in the vast steel industry. Several short stories make up the total book. Fine reading for the child interested in learning more about this industry and at the same time it may be read purely for enjoyment.

Intermediate

Feirer, John. General Metals. New York: McGraw-Hill, 1952. 257pp.

Sections on bench metal, wrought iron, sheet metal, art metal, jewelry, and many others are covered. The book discusses principles of good design and general occupational information.

Teacher Reference

Fraser, Roland. General Metals. New York: Prentice-Hall, 1955. 244pp.

The book includes vocational guidance and the opportunity to develop manipulative skill and acquired technical knowledge.

Teacher Reference

Judson, Clara. Andrew Carnegie. Chicago: Follett Publishing, 1964. 158pp.

Andrew Carnegie's life is told from his poverty-stricken childhood through his final years as "the steel king." He gave away to worthy causes most of the great fortune he had accumulated.

Upper

MacGregor, Ellen. Miss Pickergell and the Geiger Counter. New York: McGraw-Hill Book Co., 1953. 123pp.

A fiction about a geologist who discovers uranium. The book establishes a background of information for understanding properties of various types rock. Clear vocabulary, easy to read type are geared to the Junior High level.

Intermediate

Newcomb, Elizabeth. Miracle Metals. New York: Putnam, 1962. 181pp.

This is a history of man's accomplishments in the field of metals.

Upper

Pearl, Richard. The Wonderful World of Metals. New York: Harper & Row, 1966. 115pp.

This is an easy to understand description of the earth's metals. New vocabulary words are in heavy type, and a metals quiz is at the end of the book.

Upper

Reinfeld, Fred. Uranium and other Miracle Metals. New York: Sterling Publishing Co., Inc., 1955. 129pp.

A book written for older elementary school children interested in learning more about the miracles of the atomic age. Presents the story of uranium--importance, finding the ore and mining. It is filled with many important facts and illustrations, some of which are in color.

Upper

Siegner, Vernon. Art Metals. Chicago: Goodheart-Willcox, 1961. 96pp.

This book is for the metal working beginner. It provides an opportunity for becoming familiar with metal-working tools, developing safe practices, and understanding how raw materials are converted into finished products.

Teacher Reference

Smith, Robert. Etching, Spinning & Tooling Metals. Illinois: McKnight & McKnight, 1951. 87pp.

The units in this book give information about metals, tools and equipment, and tell how to perform the various operations in working metal by etching, spinning, raising and tooling it.

Teacher Reference

alker, John. Modern Metalworking. Chicago: Goodheart-Willcox, 1965. 26pp.

The author supplies basic information on tools, materials, and procedures used in metalworking operations.

Teacher Reference

OIL

Bate, Norman. Who Fishes for Oil. New York: Charles Scribner's Sons, 1955. 44pp.

A picture story book about drilling for oil under water. The story is related through animated boats. The many different types of boats involved in this adventure do all the talking. A fine introduction to the oil industry (at least this one phase).

Primary

Brooks, Anita. Picture Book of Oil. New York: Day, 1965. 94pp.

This history of oil is revealed by the author in order to show its story today. It tells about oil's discovery, refining, and delivery.

Upper

Buehr, Walter. Oil! Today's Black Magic. New York: Morrow, 1957, 86pp.

The author begins with the explanation of how oil is formed in the ground and then moves on to describe the history of oil. From this point the more technical aspects of exploration, drilling, and refining are explained.

Upper

Beuhr, Walter. Underground Riches. New York: Morrow, 1958. 95pp.

Story of mining and its problems. Metals discussed are gold, coal, and iron.

Intermediate

Cooke, David. Behind the Scenes at the Oil Field. New York: Dodd, 1959. 64pp.

This book tells of how oil is found and brought to the surface and refined into products which we use everyday of our lives.

Upper

Floherty, John J. Flowing Gold: The Romance of Oil. New York: J. B Lippincott Co., 1957. 224pp.

An adventure story about the vast oil industry of today. The author puts forth much effort in making the story clear and understandable through the use of drawings, actual photographs, and easy to read chapters.

Upper

Gringhus, Dirk. Rock Oil to Rockets. New York: MacMillan, 1960. 28pp.

This is the story of petroleum from Colonel Drake's discovery in Pennsylvania to the present day off-shore drilling for oil.

Intermediate/Upper

Lewis, Alfred. The New World of Petroleur New York: Dodd, 1966. 80pp.

The reader will learn about the many products that come from the processing of crude oil.

Upper

Mauzey, Merritt. Oilfield Boy. New York: Abelard-Schuman, 1957. 80pp.

The Oilfield Boy is Albert Clay, and we join him in the oil-fields to learn the worker's special language, ancient methods of drilling, producing, and transportation.

Upper

Norling, Jo and Ernest. Pogo's Oil Well-Story of Petroleum.

New York: Holt, Rinehart & Winston, 1955. 58pp.

Through Pogo (a puppy) the reader learns how oil is formed, refined and used today. Illustrated with large pictures and large print.

Primary

Olds, Elizabeth. Deep Treasure: A Story of Oil. Boston: Houghton, Mifflin Company, 1958. 38pp.

An excellent story about the origins of oil, how it was discovered and finally became an important industry of the twentieth century. It is written as a picture story. Loaded with many interesting facts of this industry.

Intermediate

Petersham, Maud. Simplified Petroleum Chemistry and Physics. California: Petroleum, Educational Institute, 1943. 122pp.

Fundamentals in chemistry and physics are told in simple language. Topics discussed are gravity, temperature, boiling point, absorption and distillation.

Teacher Reference

Petersham, Maud. The Story Book of Oil. Chicago: Winston. 31pp.

This book shows the history and uses of oil.

Intermediate

Schackne, Stewart and N. D'Arcy Drake. Oil for the World. New York: Harper and Brothers, 1960. 140pp.

A fine recap of this most important industry, relating much about locating, refining, and transporting oil. This writing provides a rather complete study of the subject that would tend to be too complex for very young children. Well illustrated to aid in understanding this vast process.

Upper

PAPER

Buehr, Walter. Magic of Paper. New York: William Morrow & Company, 1966. 96pp.

The author shows what was used before paper was discovered and the development of paper thru primitive stages to what it is today. Future plans for paper are discussed such as paper houses, insulate wire of paper, and paper table tops. The print is large and pictures are in color.

Intermediate

Cooke, David. How Paper Is Made. New York: Dodd, Meade & Company. 64pp.

An excellent description of the process of making paper. It is written for the intermediate child so he can understand the various stages in the papermaking process.

Intermediate

Meyer, Jerome. Paper. New York: World Publishing Company, 1960. 91pp.

Primitive ways of making paper are told. The process of how methods have changed to modern methods is developed. Pictures and story tell the steps of the modern methods of paper making - tree to newspaper.

Intermediate

Norling, Ernest and Jo, Pogo's Letter: A Story of Paper. New York: Henry Holt & Co. 1946. 43pp.

An introduction to the paper industry from pulp to finished paper. Written in picture story form.

Primary

PHOTOGRAPHY

Barry, Les. Getting Started in Photography.

Most of the book is about cameras although it does cover film and gives some points on taking pictures. The part on cameras is very good in that it gives a good description of the different types of cameras.

Teacher Reference

Eastman Kodak Company. Adventures in Pictureraking. New York: 1964. 33pp.

In these pages you'll read about tools and techniques for expanding your photographic horizons. You will find many ways to improve your pictures and to have more enjoyment with a wonderful hobby.

Teacher Reference

Eastman Kodak Company. Copying. New York: 1962. 48pp.

Information on lighting, exposure, and processing is given in this book for copying graphs, negatives, prints, paintings, fabrics, and other materials.

Teacher Reference

Eastman Kodak Company. Enlarging. New York: 1967. 56pp.

This book tells you how to make sharp, well-exposed, and well-composed enlargements from your negative, both black and white and color.

Teacher Reference

Eastman Kodak Company. How To Make Good Pictures. New York: 1967. 190pp.

This book is about pictures and some of the features that make pictures better than run-of-the-mill. It is non-technical and very helpful to the amateur.

Teacher Reference

Eastman Kodak Company. Kodak Films in Rolls. New York: 1965. 26pp.

The information in this book is presented to help you understand the properties of negative materials and to facilitate the proper selection and use of black and white films in rolls.

Teacher Reference

Eastman Kodak Company. Negative Making. New York: 1966. 35pp.

This book is concerned with films for the professional photographer. It discusses film usage and presents facts and figures on specific films.

Teacher Reference

Eastman Kodak Company. Photographic Papers. New York: 1965. 32pp.

This book is presented to help you understand photographic papers, select them appropriately, and use them well.

Teacher Reference

Eastman Kodak Company. Photography Through the Microscope. New York: 1966. 75pp.

The purpose of this book is to discuss briefly some of the problems involved in making photomicrographs with a compound microscope at low, medium, and high magnifications.

Teacher Reference

Eastman Kodak Company. Photolab Design. New York: 1967. 66pp.

This book is written with a broad concept of design in mind. There are sections on planning, layout, and work flow. Examples of processing rooms are also featured.

Teacher Reference

Fenton, D. X. Better Photography for Amateurs. New York: Universal, 1963. 128pp.

This book is aimed at the amateur who know something about photography and is fairly good but wishes to be excellent. It discusses types of film to use and special effects that you can use to vary your pictures.

Teacher Reference

Freeman, Mae. Fun With Your Camera. New York: Random House, 1955. 55pp.

This book is designed for the beginner with his first camera. It covers many helpful pointers on shooting good pictures.

Intermediate

Gillelan, G. Howard. The Young Sportsman's Guide to Photography. New York: Nelson, 1964. 95pp.

The author discusses all types of cameras from the simplest to the most complex and tells how to get the best results from each.

Upper

Gottlieb, William. Photography. New York: Knopf, 1958. 44pp.

A basic book about taking better pictures.

Upper

Gottlieb, William. Real Book About Photography. New York: Garden City Books, 1957. 188pp.

A book on photography which could very well be used as a beginner's text on photography. The camera is well explained and illustrated. Special directions are given on taking various poses and animal shots. Valuable points on the care of your camera and picture storage. Well illustrated.

Upper

Hoke, John. The First Book of Photography. New York: Franklin Watts, Inc., 1954. 69pp.

A book that is easy to read and understand, dealing with many of the basics of photography. The author takes deliberate steps to make even the simplest operation or device clear to the reader through careful explanations and illustrations.

Intermediate

Komroff, Manual. Matthew Brady. Chicago: Encyclopedia Britannica Press, Inc., 1962. 187pp.

Biography of Matthew Brady, America's best known photographer in the 20th Century. Brady was famous for the technical advances he contributed to photography, as well as the pictures he took. Some of the photographs that won medals are shown in this book.

Upper

Weisbord, Marvin. Basic Photography. New York: Chilton Company, 1959. 141pp.

The author wrote this book for anyone who's ever taken a picture and wishes it were a better one.

Teacher Reference

147

PHYSICS

Adler, Irving. Things That Spin. New York: Day, 1960. 47pp.

It begins with a spinning top, explains the earth's rotation, and finishes with the importance of atoms.

Primary/Intermediate

Adler, Irving. The Wonders of Physics. New York: Golden Press, 1966. 166pp.

Text and pictures move from the simplest of physics concepts to the unfamiliar ones.

Upper

Campbell, Rosemae. Tops & Gyroscopes. New York: Crowell, 1959. 168pp.

This book tells the story of the gyroscope and how it evolved from the study of the top. It also elaborates on the many uses of gyroscopes in ships, airplanes, submarines, and rockets.

Upper

Clark, Mary Lou. You and Relativity. Chicago: Children's Press, 1965. 61pp.

This book deals with "one's frame of reference." Time, motion, up, and other concepts are not absolute. Several pictures are included, print is quite small.

Intermediate

Feravolo, Rocco. Easy Physics Projects: Air, Water, Heat. New Jersey: Prentice-Hall, 1966. 103pp.

The author has presented almost 50 projects to help the reader grasp the physical properties of air, water, and heat.

Intermediate/Upper

Harris, Norman. Introductory Applied Physics. New York: McGraw-Hill, 1955. 729pp.

This is a discussion of the various aspects of physics with their practical applications stressed. Each chapter is followed by a review summary.

Teacher Reference

King, Fred M. What Is Gravity? Chicago: Benefic Press, 1960. 48pp.

This book uses many colorful illustrations to show the effect of gravity. It covers weather and rockets.

Intermediate/Upper

Mann, A. L. Famous Physicists. New York: Day, 1963. 157pp.

This is the story of nine early pioneers in science and how their discoveries have made present-day living more enjoyable.

Upper

Schneider, Herman. Now Try This. New York: Scott, 1947. 40pp.

The author gives the basic principles of friction, leverage, and the inclined plane. It also shows how to move a heavy object using these tools.

Upper

Wyler, Rose & Gerlad Ames. What Makes It Go? New York: McGraw-Hill, 1958. 64pp.

Tells of different kinds of transportation from bicycles and wagons to rockets and how they work. Black and white pictures with several showing working models. A glossary is included.

Intermediate

PLASTICS

Bick, Alexander F. Plastics for Fun. New York: The Bruce Publishing Company, 1954. 96pp.

An excellent reference for anyone interested in making projects of acrylic or craft plastics. Through the use of illustrations, many of the tools and techniques for working these plastics are clearly presented. The author offers a good selection of interesting projects plus a list of references for further study.

Upper

Buehr, Walter. Plastics: The Man-Made Miracle. New York: William Morrow & Company, 1967. 96pp.

The author gives the history of plastics and then develops the manufacturing pf plastics today. There are many uses for plastics in today's world and the author looks into the future of plastic. The print is large and the vocabulary is fit for the intermediate level. The pictures and diagrams are in three colors.

Intermediate

Cherry, Raymond. General Plastics. Illinois: McKnight, 1967. 315pp.

The author covers the fabrication of plastics with hand and power tools, and suggests practical and attractive objects to construct.

Teacher Reference

Colby, C. B. Plastic Magic. New York: Coward-McCann, Inc., 1959. 48pp.

This book describes the uses and properties of plastics and the various methods of making plastic products and compression molding. It has many illustrations and is informative.

Upper

Cope, Dwight. Plastics. Illinois: Goodheart-Wilcox, 1966. 96pp.

This course on plastics describes cutting, sanding, polishing, heat forming, castings, and machining procedures.

Teacher Reference

Groneman, Chris. Plastics Made Practical. New York: The Bruce Publishing Company, 1948. 324pp.

Slightly advanced for general elementary school use. History, types and classification of plastics, processes and many project ideas are included.

Teacher Reference

Jolliffe, Anne. From Pots to Plastics. New York: Hawthorne Books, Inc., 1965. 32pp.

This book takes the development of technological tools and materials from Stone Age to Present-Day rockets. It mentions chemical change by heat, different ways of making heat thru discovery of atoms, rubber, drugs, and rockets. Every page has modern, colorful pictures, especially attractive to primary grades.

Primary/Intermediate

Lappin, Alvin. Plastics: Projects & Techniques. Illinois: McKnight, 1965. 136pp.

Projects are presented in order from simple to complex problems. Diagrams and photographs illustrate the projects and their jigs.

Teacher Reference

Newcomb, Ellsworth. Miracle Plastics. New York: G. P. Putnam's Sons.

Story tells how less than a hundred years ago a young chemist in search for a substitute for ivory came up

with a material called celluloid.

This was the beginning of the plastics industry. Illustrations and diagrams are in black and white.

Upper

Newkirk, Louis V., Coleman Hewitt, and LaVada Zutter. Adventures with Plastics. New York: D. C. Heath Company, 1947. 275pp.

A good general information book that could be used in the elementary school as an introduction to plastics through working with this material. More than one hundred plastics projects are discussed and illustrated, working from the very simple to the complex.

Teacher Reference

Richards, Benjamin T. Handicraft in Plastics. Peoria: Chas. A. Bennett Company, Inc., 1948. 92pp.

General information about the craft plastics and the industry itself. It includes some illustrations of projects that could easily be made by elementary school children from inexpensive plastic scraps.

Teacher Reference

Swanson, Robert. Plastics Technology. Illinois: McKnight, 1965. 232pp.

Explains how to work with plastics and describes the processes by which raw materials are converted to finished products.

Teacher Reference

PRINTING

Cooke, David. How Books are Made. New York: Dodd, 1963. 63pp.

The reader is guided through the publisher's office and follows the step-by-step manufacture of a book. Type setting and printing plates are made; pictures of the huge presses are displayed.

Intermediate

Epstein, Sam. First Book of Printing. New York: Watts, 1955. 62pp.

This book gives a history of printing from moveable type to electronic engravers and photo typesetters. The three most widely used processes of reproduction are explained step-by-step.

Upper

Faber, Doris. Printer's Devil to Publisher. New York: Julian Messner, Inc., 1963. 183pp.

Personal ancedotes about Adolph S. Ochs, publisher of The New York Times. Written for older readers. Bibliography and index.

Upper

Foster, Joanna. Pages, Pictures, and Print. New York: Harcourt, Brace and Company, 1958. 96pp.

A fine story relating the process of writing a book, all the way through the printing and binding. A well illustrated story depicting many interesting points of the modern printing industry.

Upper

Kafka, Francis. Linoleum Block Printing. Illinois: McKnight, 1955. 84pp.

This book gives the basic information required for practicing the art of printing with a linoleum block. There is a list of projects and good photographs.

Teacher Reference

Lent, Henry B. From Trees to Paper: The Story of Newsprint. New York: The Macmillan Company, 1952. 149pp.

A story about newsprint. It explains how it came to exist from its beginning in the lumber camps to the finished roll of white paper delivered to the many newspaper printing presses. Along with a story of the newsprint industry, the author includes some insight into the lives of the many working people involved.

Intermediate

Lieberman, J. Printing as a Hobby. New York: Sterling, 1963. 128pp.

The author gives you all of the fundamentals you need to start printing, helpful hints, and suggestions as to where to get supplies.

Upper

RUBBER

Eberle, Irmegarde. The New World of Rubber. New York: Dodd, Mead, & Co., 1966. 80pp.

The author explains the history of discovering and developing rubber, how rubber is grown on plantations, how rubber is manufactured, and the many uses of rubber today--auto, airplane, rockets, industry, cables, computers, etc. The print is average size.

Intermediate

Perry, Josephine. The Rubber Industry. New York: Longmans, Green and Company, 1941. 96pp.

A brief account of the growth and development of the rubber industry, intended to only touch upon a few of its important phases. The text recounts some of the progress in the production of plantation rubber and its influence on rubber manufacture, plus a brief outline of some manufacturing methods.

Upper

SCIENCE

ACEI. Science for the 8-12's. Washington, D. C.: Association of Childhood Education International. 1964. 56pp.

This bulletin offers topics by different authors. What is Science? What are middle-grade children like? How well have we taught? Selecting materials for Science. Different experiments with Physical and Chemical Forces, Earth, living things, environment are sandwiched thru the bulletin. Pictures are B & W.

Teacher Reference

ACEI. Young Children and Science. Washington, D. C.: ACEI, 1964. 56pp.

This bulletin has articles by different authors explaining what science is for the young child and how adults can play a vital role in this child's learning experience. Pictures are B & W. Science experiments and questions that children will ask are sandwitched thru the bulletin.

Teacher Reference

Barr, George. Young Scientist and the Fire Department. New York: McGraw-Hill, 1966. 143pp.

A book written for youngsters on the science of fire fighting. Principles of fire are introduced and applied to situations familiar to children.

Intermediate

Bendrick, Jeanne. The Shape of the Earth. New York: Rand McNally and Co., 1965. 72pp.

This book gives a short theory of how the earth began and changes. It involves the history of discovering the earth. There are brown, black and white pictures, and illustrations on almost every page. The print is large. The language is technical, but the author offers both explanations and a dictionary.

Intermediate

Buehr, Walter. The Story of Locks. New York: Charles Scribner's Sons, 1953. 45pp.

An excellent book for elementary children, relating the history of the development of the lock, through the use of pictures and manuscript. Author begins with early locks and keys to the present day combination and time locks.

Intermediate

Fogel, Barbara. What's the Biggest? New York: Random House, 1966. 113pp.

The author explores the "meaning of size" in the world around us. He shows the things that hold the records for being the BIGGEST -- buildings, animals, telescopes, caves, etc. He presents questions and then answers the question. The print is large. The sketches are black and white.

Intermediate

Freeman, Mae. A Book of Real Science. New York: Four Winds Press, 1966. 48pp.

This book answers questions which interest young readers in electricity, light, heat, outerspace, gravity, etc. Each chapter ends with a question. The pictures are orange and black. The print is big.

Intermediate

Freeman, Mae. Your Wonderful World of Science. New York: Random House, 1959. 83pp. Illustrated.

An introduction to astronomy which presents basic facts in an easy to read text. Some of the experiments are illustrated.

Intermediate

Gourlay, Walter. Picture Book of Today's Scientists. New York: Sterling Publishing Co., 1966. 64pp.

The findings of famous scientists with portraits of them and their most famous findings: Von Braun, Woodward, Salk, Oppenheimer, etc.

Upper

Leaf, Munro. Science Can Be Fun. New York: J. B. Lippincott, 1958. 48pp.

Principles dealing with our earth, air, plants, electricity, magnets and liquids are presented in easily understood pictures and words.

Intermediate

Mandell, Muriel. Science for Children. New York: Sterling, 1959. 96pp.

This book primarily deals with air, water, mechanical energy, heat, and sound with many experiments to illustrate the facts.

Intermediate

Martin, Charles. The Universe of Science. Hill and Wang. New York: 1961. 208pp.

This book is directed to the educated man who wants to keep in touch with recent process as well as to the young person who wants to learn all he can of the world in which he lives -- from microcosm to macrocosm.

Teacher Reference

Vergara, William. Science, the Never-Ending Quest. New York: Harper and Row, 1956. 434pp.

This book explains the basic ideas behind scientific discoveries from early days to the present, showing how they relate to each other and to man's progress and needs.

Teacher Reference

Watso, Jane. The World of Science. New York: Simon and Schuster, 1958. 216pp.

The author tries to communicate some of the excitement of science, stimulate imaginations, and increase the desire to know more about Geology, Astronomy, Mathematics, Physics, Biology and Engineering.

Teacher Reference

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SCIENCE EXPERIMENTS

Barr, George. Research Adventures for Young Scientists. New York: McGraw-Hill, 1958. 142pp. Illustrated.

It provides easy-to-do experiments in various fields of science. Is gives the reader an opportunity to get the feel of research.

Intermediate

Beeler, Nelson. More Experiments in Science. New York: Crowell, 1950. 176pp.

The experiments in this book use only very simple equipment. The directions are concise and easy to follow.

Intermediate

Bradley, Duane. Here's How It Works. New York: Lippincott, 1962.

This text deals with many phases of science (air, water, light, sound, motion) and then provides experiments to illustrate the lessons to be learned.

Upper

Herbert, D. Mr. Wizard's Experiments for Young Scientists. New York: Doubleday & Co., Inc., 1955. 187pp.

A book of experiments for young "potential" scientists. It is designed to aid creative thinking in youngest. Each category of scientific study designates for the youngster the methods of procedure. Very simple, inexpensive equipment will make concepts about the environment and phenomena of behavior of elements more meaningful.

Upper

Holland, Marion. A Big Ball of String. New York: Random House, 1958. 64pp.

A little boy goes to a junkyard and starts to make a ball out of the strong he finds. The story is told in poem form.

Primary/Intermediate

Kadesch, Robert. The Crazy Cantilever and Other Science Experiments. New York: Harper & Bros., 1961. 175pp.

Forty experiments on subjects such as pendulum patterns, centrifugal force, pinhole camera, magnification, electricity, and gravity are described and illustrated for inexpensive and easy to get materials.

Intermediate

Keen, Martin. The How and Why Wonder Book of Science Experiments. New York: Grosset and Dunlap, 1962. 48pp.

Principles and experiments dealing with air, water, sound and astronomy are presented. Illustrations and text are at a child's interest level. Experiments are easy and done with common materials found in the home.

Intermediate

Kleinman, Louis. Easy Science Experiments. New York: Hart Publishing Company, 1959. 192pp.

Experiments with air, heat, natural forces, electricity, water, light, sound, chemicals, and the human body are developed in this book. Directions and illustrations for experiments are at a child's level of interest and understanding.

Intermediate

Lotspeich, William D. How Scientists Find Out. Boston: Little, Brown, and Co., 1965. 140pp.

A book by an author who is both physician and physiologist. The book aims to tell, through real cases how discoveries are made by research workers; how ideas lead to experiments and how the results of experiments came to be called "discoveries."

Upper

Lynde, Carleton. Science Experiments with Home Equipment. New York: International Textbook Company, 1949. 230pp.

The author illustrates 200 experiments that can easily be done in the home.

Upper

Marcus, Rebecca. Galileo and Experimental Science. New York: Franklin Watts, 1961. 126pp.

Biography of Galileo and the contributions he made in the development of modern science. The areas of astronomy, physics, instrument-making owe much to this great man.

Upper

McKnown, Robin. Marie Curie. New York: G. P. Putnam's Sons, 1959. 128pp.

A biography of a scientist, who with her husband, was the discoverer of radium. As a result of her work, the study of physics and chemistry was revolutionized.

Upper

Newbury, Norman. The Junior Scientist. New York: Sterling Publishing Company, 1962. 96pp.

Experiments dealing with light, air, simple machines, simple circuits, storms and weather, gravity, and the human body are developed. Colorful pictures and questions to guide learning make the book interesting to a child.

Intermediate

Newbury, Norman. The Young Experimenter. New York: Sterling Publishing Company, 1960. 96pp.

Simple things you take for granted, such as: air, water, trees, flowers and birds, hold mysterious secrets that become clear as you put your probing, scientific mind to work to solve problems presented in this book. Experiments, illustrations and directions are on a child's level.

Intermediate

Podendorf, Illa. 101 Science Experiments. Chicago: Children's Press, 1960. 155pp.

The author gives experiments which cover the following fields: Air, magnets, electricity, water, sound, light, simple machines, heat, chemistry, plants. The print is big; the many pictures and diagrams are colorful.

Primary/Intermediate

Podendorf, Illa. The True Book of More Science Experiments. Chicago: Children's Press, 1956. 47pp.

Author gives simple experiments of light, machines, inertia, ice, water, evaporation. They offer the basic principles in a "fun" experiment. The pictures are big and colorful. The print is large.

Intermediate

Posin, Dan. Find Out! New York: Golden Press, 1964. 54pp.

This book touches on astronomy, spectroscopes and how they work, the earth's atmosphere and water, bursts of energy and atoms, tools for finding out how things work, and vehicles for finding out.

Upper

Schlein, Miriam. A Pile of Junk. New York: Abelard, 1962. 46pp.

An old lady who collects junk decides to start giving it away to children. She clears it out of her house, and the pile of junk is gone by the next day.

Intermediate

Sootin, Harry. The Young Experimenter's Workbook. New York: Norton, 1965. 59pp.

Fifty inexpensive experiments concerning substances of the earth are well illustrated. Some of the experiments include an acid test, water and soil tests, etc.

Intermediate/Upper

Stockard, Jimmy Jr. Experiments for Young Scientists. Boston: Little, Brown & Company, 1964. 86pp.

This book consists of simple experiments using items found around the house. Included are air, water, simple machines, sound, light, magnets, and electricity. There is a glossary of key words. It was written "with the hope that it may give young people a greater understanding of the world of scientific phenomenon." It tells what materials are needed, how to do the experiment, what happens, and why.

Intermediate

Stone, George K. Science Projects You Can Do. New Jersey: Prentice-Hall, 1963. 101pp.

A book of 101 science projects for the beginner are presented with clear diagrams.

Intermediate

Straight, Gerald. The Young Scientist's Reader. New York: Hart Book Company, Inc. 126pp.

This book is interesting for youngsters interested in astronomy, chemistry, botany, mathematics, and radio. Simple home experiments and science magic are included. Well illustrated.

Intermediate/Upper

Wyler, Rose. Prove It! New York: Harper & Row, 1963. 53pp.

This book deals with experiments in water, air, sound, and magnets. These experiments can be made with items such as wax paper, soap, pepper, and sugar. Illustrated.

Intermediate

SENSES

Adler, Irving & Ruth. Taste, Touch, and Smell. New York: John Day Company, Inc., 1966. 48pp.

This book treats the senses of taste, touch, and smell. The author explains the electrical network inside a body, pain and medical means of combating pain, facts and theories about smell. The diagrams are clear, complete, and simple. There is an index of terms.

Intermediate

Bevans, Margaret van Doren. "I Wonder Why?" Thought The Owl. New York: G. P. Putnam's Sons, 1965. 41pp.

A fiction that illustrates reactions of alarm, suspicion, and fear shown by man when he does not understand about animals or birds in his environment. Illustrations, printing large and legible.

Primary/Intermediate

Borton, Helen. Do You Move As I Do? New York: Abelard - Schuman.

A child sees movement all around him. This book is to challenge the child's senses and increase his awareness of the beauties in the world around him.

Primary/Intermediate

Borton, Helen. Do You See What I See? New York: Abelard - Schuman, 1959. 42pp.

Although the coloring is poor, the story is very good for introducing or capsuling shapes, lines, color, and a beginning to look at the world in terms of shapes.

The author introduces line, shape, color, square, triangle, rectangle, and relates each to something in the world e.g. triangle is found in the head of a fox. Good non-text explanation of shapes as geometric introduction.

Primary

Fisher, Aileen. I Wonder How, I Wonder Why. New York: Abelard - Schuman, 1962.

A child wonders about many things. To him the world is new and everything he sees stirs his imagination.

Questions asked, Where does a road go? How do the sun and moon know when to shine?

Enjoyable verses to be read to children.

Primary

Macpherson, Elizabeth. The Wonderful Whistle. New York: G. P Putnam's Sons, 1965. 48pp.

A fiction in which a little boy discovers how to whistle various tunes during his pre-school years. The concept of sound involves quality, pitch, and intensity.

Primary

Neurath, Marie. Too Small To See. New York: Sterling, 1956. 36pp.

The author illustrates many interesting facets that are unnoticed in various animals. Examples are: the brush and comb of the common fly, strange tongues, etc.

Primary

Sands, George. Why Glasses? New York: Lerner, 1960. 30pp.

The author, a medical doctor, explains how our eyes work and the importance of glasses.

Primary

Schloat, G. Warren. Andy's Wonderful Telescope. New York: Scribner, 1958. 48pp.

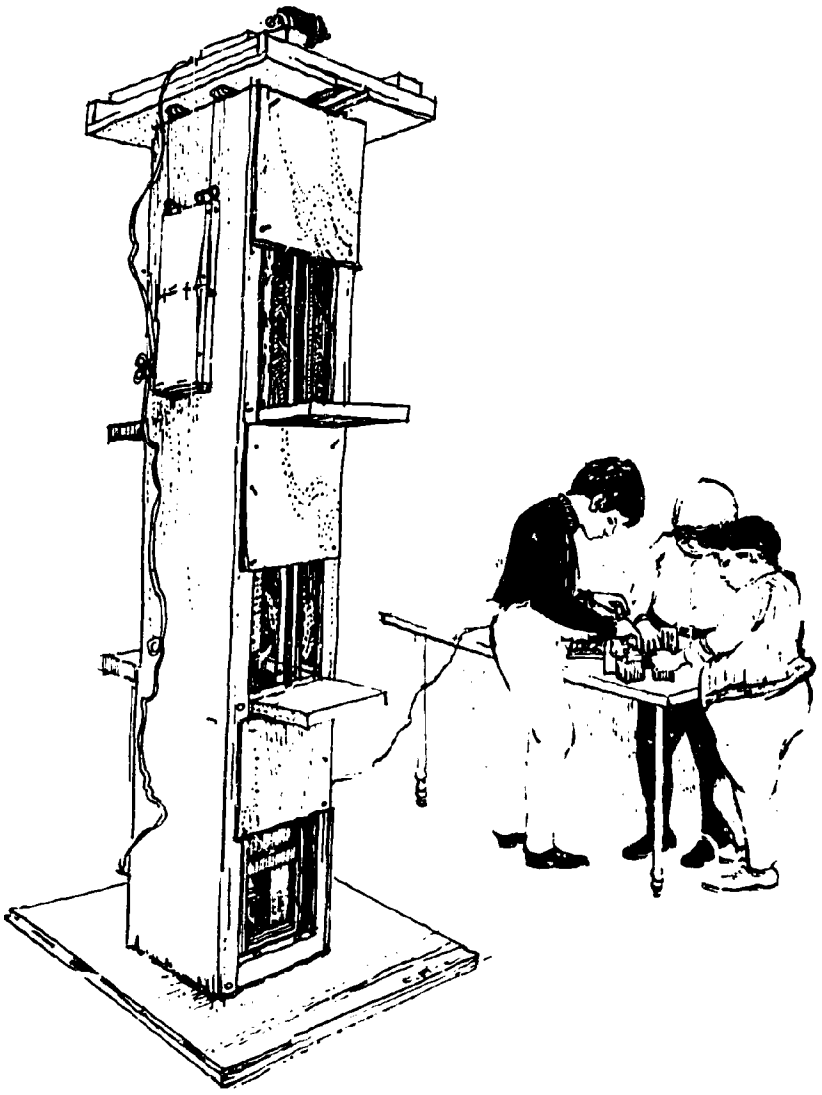
This is basically a book of pictures that show a boy and his telescope and the wonderful things he discovers.

Intermediate

Showers, Paul. The Listening Walk. New York: Thomas Y. Crowell Company, 1961. 36pp.

On a walk, a boy discovers over twenty different common sounds often taken for granted. Sounds are illustrated well. Large print and short sentences are geared to primary level.

Primary



SILK SCREEN

Biegeleisen, J. Silk Screen Techniques. New York: Dover, 1942. 187pp.

An interesting and easy to understand book that includes the origin and development of stenciling, along with a description of the basic equipment and methods for preparing the stencils.

Teacher Reference

Eisenberg, James. Silk Screen Printing. Illinois: McKnight, 1957. 91pp.

This book gives the fundamentals needed to pursue the art of silk screen printing. It includes new techniques and emphasizes homemade equipment.

Teacher Reference

Heller, Jules. Printmaking Today. New York: Holt, Rinehart & Winston, 1958. 261pp.

The author presents information for many levels of printmaking. Some of the topics are lithographs, woodcuts, etchings, and silkscreen.

Teacher Reference

Ohio I.A.A. Basic Course In Screen Printing.

This book is primarily for the instruction of an adult evening course in silk screen techniques. It is an accelerated course and is based on the use of existing art work rather than on original creations.

Teacher Reference

SOUND

Anderson, Dorothy S. Junior Science Book of Sound. Illinois: Garrard Press, 1962. 62pp.

This text explains how sound is made and how it travels. Experiments with sound are shown with diagrams.

Intermediate

Branley, Franklyn. Rusty Rings a Bell. New York: Crowell, 1957. 26pp.

This is a pictorial story for children concerning the science of making a bell ring from the power in a battery.

Primary

Brinton, Henry. Sound. New York: Day, 1963. 48pp.

The author explains how sounds are made, how they travel in waves, difference between high and low noises,and how to reproduce sounds on records.

Intermediate

Burlingame, Roger. Out of Silence Into Sound. New York: The Macmillan Company, 1964.

This book tells the story of a man who got the knowledge he needed and went on to perfect the first telephone. Today the Bell Laboratories - the descendant of the inventor's own workshop - are responsible for the wonders of radio astronomy and Telstar.

Upper

Keen, Martin. The How and Why Wonder Book of Sound. New York: Grosset and Dunlap, 1962. 48pp.

Nature of sound, measuring sound, reflected sound, musical instruments, living sound organs, sound communications, ultrasonics, and supersonics are dealt with in this book. Pictures are colorful and reading is at a child's level.

Intermediate

Kettelkamp, Larry. The Magic of Sound. New York: Morrow, 1956. 62pp.

The author explains the many aspects of the phenomenon of sound in our daily life. Detailed descriptions of procedures for performing basic experiments in sound are given.

Markey, Dorothy. Explorer of Sound: Michael Pupin. New York: Messner, 1964. 191pp.

Michael Pupin changes from a penniless immigrant to a famous inventor. The Pupin coil made long distance telephone lines possible, and his electronic resonator that amplified sound changed the face of America.

Upper

Meyer, Jerome. Sound and Its Reproduction. New York: World Publishing Company, 1964. 64pp.

The author develops the following concepts of sound: wave motion, frequency of sound, loudness of sound, how to record sound, how our ear receives sound waves, how our vocal cords make sound, echoes, and resonance. Many illustrations and experiments are given.

Intermediate

Miller, Lisa. Sound. New York: Coward-McCann, Inc., 1965. 42pp.

The scientific concepts of sound are introduced by using everyday, familiar happenings. Abstract terms such as pitch, frequency and wave lengths are introduced through simple, colorful illustrations and simple explanations easily understood by primary ages.

Primary/Intermediate

Pine, Tillie S. Sounds All Around. New York: Whittlesay House, 1958. 46pp.

What makes sound? Why are there sounds? These are a few of the questions answered by the author. Many experiments are included to illustrate various points concerning sound.

Primary/Intermediate

Podendorf, Illa. True Book of Sounds We Hear. Chicago: Children's Press, 1955. 47pp.

A picture on every page; large type. Book relates how we hear sounds, how animals hear and just where their ears are; also, man, and animals, and things make sounds. The book ends with the meaning sounds can have. Good motivation.

Primary

Reuban, Gabriele H. What Is Sound? New York: Benefic Press, 1960. 40pp.

Pictures and text illustrate how sounds are made and received.

Primary

Sootin, Harry. Science Experiments With Sound. New York: W. W. Norton & Company, 1964. 88pp.

Fifty or more experiments on: vibrations and sound, the reflection of sound waves, refraction of sound, diffraction of sound, natural vibrations and resonance, tone quality, vibrating flames, musical intervals, vibrations of rods and wires, the xylophone, and vibrations of bell-shaped bodies, Savart's wheel, a siren disk, and the Doppler effect are also included. Each experiment can be carried out with simple, inexpensive equipment. Detailed illustrations.

Upper

Tannenbaum, Harold. We Read About Sounds and How They Are Made. New York: Webster, 1960. 24pp.

An easy to read book for children on the various sounds and how they are made.

Primary

Windle, Eric. Sounds You Cannot Hear. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963. 69pp.

This is the story of ultrasonics, the world of silent sound. A few of the topics developed are: how these sounds were discovered, how sound waves are used to land airplanes, how hurricanes are located and how television pictures are sent across the ocean.

Intermediate

SPACE TRAVEL

Agle, Nan Hayden. Three Boys and Space. New York Charles Scribner, 1962. 159pp.

A fiction in which three boys become involved in and excited about the Space Age. The motivation stimulated by the appearance on TV of seven astronauts. A model rocket became their goal which they constructed from an old hot water heater. They did research in the library to help them understand the principles involved.

Intermediate

Branley, Franklyn M. A Book of Satellites for You. New York: Thomas Y. Crowell Company. 80pp.

An interesting book for young children interested in science and astronomy.

Intermediate

Brooks, Walter R. Freddy and the Space Ship. New York: Alfred A. Knopf, 1953. 262pp.

A fiction involving the launching of a homemade ship. The imaginary destination is Mars. Talking animals add to the fantasy.

Intermediate

Cameron, Eleanor. Mr. Bass's Planetoid. Boston: Little Brown, & Company, 1958. 288pp.

The discovery of a new element leads to a frantic search and a chase. The boys take a rocket to an island in space.

Upper

Cameron, Eleanor. A Mystery For Mr. Bass. Boston: Little, Brown, & Company, 1960. 229pp.

A fiction which involves two boys and two inventors from another planet. The boys have a space ship which they made and they take off for the mushroom planet.

Upper

Cameron, Eleanor. Stowaway to the Mushroom Planet. Boston: Little, Brown, & Company, 1956. 226pp.

Horatio Peabody arrives to give a lecture and does some sleuthing on the side. The boys take their first flight and have a narrow escape from the mushroom people.

Upper

Cameron, Eleanor. The Wonderful Flight to the Mushroom Planet. New York: 1954. 214pp.

A fiction involved two boys who constructed a space ship with a scientist, Mr. Bass. The flight in the space ship to the Mushroom Planet proved exciting.

Upper

Colby, Carroll B. Our Space Age Jets. New York: Coward-McCann, 1959. 48pp.

Contains photographs and scale drawings of twenty-three jet fighter planes with information on speed, bomb load, engine, ceiling, and range.

Intermediate

Coombs, Charles. Project Apollo. New York: William Morrow & Company, 1965. 94pp.

An accurate and exciting account of the proposed journey to the moon from lift-off to the water landing on the earth's surface. On this first manned moon flight, a unique

three-part spacecraft will be used. It will consist of the command module, the service module, and the lunar excursion module, commonly called the "bug." The author explains exactly how it will be powered; he also describes the bug's landing on the moon, its rendezvous with the command module that remains in orbit around the moon, and the dangerous re-entry into the earth's atmosphere.

A few of the photographs are of actual equipment; most are of artist's concepts of the mission. Index.

Intermediate

Coombs, Charles. Project Mercury. New York: Morrow, 1960. 62pp.

A clearly written and illustrated text of the problems facing a man being launched into orbit in a space capsule.

Intermediate

Crosby, Alexander L. The World of Rockets. New York: Random House, 1959.

A book all about rockets for young readers desirous of knowing more about rockets and the space world. Tells about astronauts and their responsibilities. Illustrated.

Primary/Intermediate

Crosby, Alexander L. and Larrick, Nancy. Rockets Into Space. New York: Random House, 1959.

An interesting story that begins with the use of gun powder in China to our present day rockets and satellites.

Also includes plans to build a space station, a trip to the moon and Mars.

Illustrations are good.

Intermediate

Hyde, Margaret. Off Into Space. New York: McGraw-Hill, 1966. 63pp.

Book on space gardens, space menus, space taxis, space stations, and the moon.

Intermediate

Johnson, Crockett. Harold's Trip to the Sky. New York: Harper & Row, 1957. 59pp.

An enjoyable, light, humorous book with much imagination. Harold with a purple crayon draws his way to Mars on a fun adventure. Kindergarten children and pre-school should enjoy this youngster. Older children will enjoy the humor and imagination included. Picture on every page - done with purple and white.

Primary/Intermediate

King, Henry C. Our World in Space. Philadelphia: Macrae Smith Company, 1964. 90pp.

This book is an explanation of astronomy with a particular emphasis on the sizes, distances and movements of our solar system and the rest of the universe. The author explains the realm of astronomy in terms of the more familiar phenomena of the everyday world: the known universe can be imagined in terms of dimes (representing galaxies) sprinkled through a mile of air; the distance to the moon can be understood by realizing how long it would take an express train to get there at 60 m.p.h.; and the expanding universe can be demonstrated by a boy blowing up a balloon covered with dried spots of ink. Black and white illustrations.

Intermediate

Kondo, Herbert. Adventures in Space and Time. New York: Holiday House, 1966. 93pp.

Einsteon's theory of relativity, motion, space, and time. Has index and suggested further reading list.

Intermediate

MacGregor, Ellen. Miss Pickerell Goes to Mars. New York: McGraw-Hill Book Co., 1953. 123pp.

A fiction about a geologist who discovers a space-ship in the pasture. The scientific interest in outer space could be stimulated by this adventure.

Intermediate

Maisak, Lawrence. Survival on the Moon. New York: Macmillan Co , 1966. 159pp.

Has glossary and index and illustrations. Book on moon, eclipses, atmosphere, algae, sources of water, food, dust and meteorites, temperature, radiation, working on the moon and lunar travel. Has appendix and further suggestions for reading.

Upper

Russell, Salveg Paulson. From Rocks to Rockets. New York: Rand McNally & Co., 1960. 60pp.

Development of technological ideas from stone age to modern times.

Upper

Scharff, Robert. Into Space with the Astronauts. New York: Grosset and Dunlap, 1965.

The story tells about the men that become astronauts. The preparations they must make and the knowledge they must have to travel in space. It also tells about plans to take a trip to the moon. Illustrations and print are good.

Intermediate

Slobadkin, Louis. Spaceship Returns to the Apple Tree. New York: The Macmillan Co., 1958.

This story would be liked by all children. Children would certainly like to try to make a telegraph. The travels

Eddie had with his friend could be traced on a map. Marty and Eddie saw Washington, D. C., Miami Beach, Boston, New Orleans, Florida and California.

Intermediate

Sonneborn, Ruth. The Question and Answer Book of Space. New York: Random House, 1965.

This is a book about space, rockets and satellites. It also tells about the requirements necessary to become an astronaut and about a trip to the moon. Print and illustrations are good.

Intermediate

Stambler, Irwin. Orbiting Stations. New York: G P. Putnam's Sons, 1965. 93pp.

An excellent book about our space age. The author begins with a discussion of space ferries, the vehicles needed to transport men and equipment to the station. He continues with the Titan III booster system, the Dyna-Soar program, and the developmental history of the Manned Orbital Laboratory (MOL) with all of its design problems.

All of the phases leading to the selection and training of the crew and the fuel types are told in this up-to-date account of orbiting stations. Illustrated with photographs.

Upper

Walters, Hugh. Expedition Venus. New York: Criterion, 1963. 101pp.

The fate of the world depends on Chris Godfrey's suspense-filled flight to Venus and his attempts to cope with a deadly grey, creeping fungus.

Upper

Walters, Hugh. Mission to Mercury. New York: Criterion, 1965. 189pp.

Four men and one woman make the dangerous flight to Mercury, where they are greeted with extreme cold.

Upper

Wilson, Hazel. Herbert's Space Trip. New York: Alfred A. Knopf, 1965. 160pp.

Story about Herbert Yudon who goes to an unknown planet in his experimental rocket; it tells of his adventures when he arrives and how he copes with the people he finds there, who think he is inferior and to whom he has to prove that he is intelligent.

Upper

Winders, Gertrude Hecker. Robert Goddard: Father of Rocketry. New York: John Day Company, 1963. 175pp.

Biography of Robert H. Goddard, pioneer inventor of rockets, based chiefly on his boyhood diaries. Important facts in Goddard's career: his early experiments, rocket tests which brought ridicule and discouragement, his research in New Mexico, association with Lindbergh, his government service, his ability to work alone, and his productive imagination.

Intermediate

Wollheim, Donald. The Secret of the 9th Planet. New York: Holt, Rinehart and Winston. 201pp.

A science fiction adventure of a high school senior who is on the first spaceship which circumnavigates the solar system. This adventure is based on scientific fact.

Upper

TELEVISION, TELEPHONE, AND RADIO

Bendick, Jeanne. Television Works Like This. New York: McGraw-Hill, 1959. 63pp.

A publication which gives the elementary child a thorough background on television. The child learns where the picture begins; about the people involved, special effects, types of film and tapes. mobile television, programs, and finally color television. The book begins with a vocabulary of new words.

Intermediate

Coombs, Charles. Window on the World. New York: World Publishing 1965. 122pp.

This book takes you behind the scenes to see the "organized confusion" needed to produce a television show.

Upper

Corbett, Scott. What Makes TV Work? New York: Little, Brown & Co., 1965. 44pp.

This text takes you inside the television camera and explains what happens to the picture. He also discusses the intricacies of color.

Upper

David, Eugene. Television and How It Works. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962. 70pp.

The author tells in narrative form how television was develcped; how television programs originate and reach the television screen; and how TV will be used in the future.

Intermediate

Dudley, Nancy. Linda Goes to A TV Studio. New York: Coward-McCann, Inc. 44pp.

This is a story about a second grade girl who wins a trip to a TV studio as a spelling test prize. It involves her encounters with some rather cold blooded TV people, and her experiences with them and a Mexican boy whom she helps get over his nervousness in front of the cameras. Has a few technical words as part of vocabulary. Very few illustrations, all black and white.

Intermediate

Knight, David. Let's Find Out About Telephones. New York: Franklin Watts, 1967. 52pp.

The author tells how telephones basically work, who uses them, the invention of the telegraph and the telephone. the use of directories, push-button phones, how phones save time. This is accompanied by illustrations.

Upper

Morgan, Alfred. The Boy's Second Book of Radio and Electronics. New York: Charles Scribner's Sons, 1957. 268pp.

An excellent book for those who do not have a wide background in radio and electronic sciences. There is useful and interesting information about electronic devices, as well as detailed directions and working drawings for easily made radio receivers and other electronic apparatus.

Intermediate

Smith, J[illegible]ph. Fun Time Radio Building. Chicago: Childrens Press, 1961. 63pp.

The author lists step-by-step the procedures to follow in making a basic crystal detector and then how to make and use a short wave receiver and transmitter.

Upper

Salomon, Louis. Telstar. New York: McGraw-Hill Book Company, Inc., 1962. 62pp.

Brief history of the launching of the satellite Telstar. Notable references made of the men who successfully launched it are included Illustrated with photographs.

Intermediate

Stoddard, Edward. The First Book of Television. New York: Watts, 1955. 61pp.

A general approach to the television industry, from the initial signal to the sponsor, is illustrated for young readers.

Upper

Tannenbaum, Harold. We Read About Television and How It Works. New York: Webster, 1960. 24pp.

This is an easy to read book about television and why it works.

Intermediate/Upper

TIME & CLOCKS

Ardizzone, Edward. Johnny The Clockmaker. New York: Henry Z. Walck, Inc., 1960. 46pp.

Story in words and pictures. Large print.

Primary

Asimor, Issac. The Clock We Live On. New York: Abelard - Schuman, 1959. 165pp.

The author gathered facts from many fields of knowledge to present a comprehensive story of time. Some of the categories presented are the numbering of years, days of the week, and the earth's rotation.

Upper

Bothwell, Jean. The Mystery Clock. New York: Dial Press, 1966. 121pp.

Fiction about a boy who made a clock. How he was called upon to solve a mystery concerning a grandfather's clock that stopped upon the death of the owner.

Intermediate

Bradley, Duane. Time For You. New York: J. B. Lippincott Company, 1960. 108pp.

This book shows the development of the Julian and Gregorian calendars as well as the concepts which underlie the Egyptian, Mayan, Greek, Japanese and other systems of measuring time. Illustrated diagrams.

Upper

Burlingame, Roger. Dictator Clock. New York: Macmillan, 1966.

Burlingame shows development of methods of keeping time--sundial, fire clock, pendulum, wheel, train, etc. He shows what discovery of rockets and development of

4th dimension theory has done to changes in telling time. The print is small. The diagrams and pictures are in black and white.

Intermediate

Gleick, Beth. Time Is When. New York: Rand-McNally, 1960. 40pp.

The second, minute, hour, day, week, month, and year are taken up in turn. The text is short and the concepts are clearly explained and illustrated.

Primary

Hagan, Marshall. My Book of Time. Maryland: Ottenheimer Publishers, Inc., 1961. 26pp.

Very colorful book written in large clear print. A general elementary history of time from the sun to the atomic time keepers. Also, there is an explanation of time zones, Greenwich, International Dateline, time in nature, geological time to the challenge of space time. Good project ideas.

Primary/Intermediate

Liberty, Gene. The How and Why of Time. New York: Wonder Books, 1963.

This is an interesting story that tells of man's efforts down through the ages to find some practical way of measuring time. Print and illustrations are good.

Intermediate

Maloney, Terry. The Story of Clocks. New York: Sterling, 1960. 48pp.

This is a complete study in the development of clocks. It covers all the different clocks used from the candle clock to the atomic clock of today.

Primary/Intermediate

Neal, Harry. The Mystery of Time. New York: Messner, 1966. 183pp.

The text and pictures are combined to tell the story of time keeping devices of man through the ages.

Primary

Slobokin, Louis. The Late Cuckoo. New York: Vanguard Press, 1962. 36pp.

A Swiss clockmaker must solve the problem of whether 122 cuckoos are right and 123rd one is wrong, or whether the 123rd is right and the rest are all wrong.

Intermediate

Williams, Jay. The Question Box. New York: Norton & Company, 1965. 47pp.

Maria explores a large clock tower and finds a mysterious little man. She finds out how the clock works.

Intermediate

TOOLS AND MEASURING

A B C's of Hand Tools. Detroit: General Motors Corporation, 1945. 49pp.

An animated booklet based on a cartoon character, Primitive Pete, created by Walt Disney, describing many common tools and their proper usage.

Intermediate/Upper

Adler, Irving. The Story of the Nail. New York: The John Day Co., 1961. 48pp.

Includes a brief history of nails and what has to be done to make them. Goes into the story of iron and steel-how they are made and refined. It also shows their many uses. Good illustrations and a small dictionary is included.

Intermediate

Adler, Irving. Tools in Your Life. New York: The John Day Co., 1956. 128pp.

An easy to read, illustrated book written for children in the middle elementary grades and up, moving from some of the early simple tools that have been used by primitive man to the more modern tools of today.

Intermediate

Beim, Jerrold. Tim And The Tool Chest. New York: William Morrow & Company, 1951. 46pp.

A fiction involving a boy who learned the skill of handling his own tools and building his own playhouse. The book is set in large primary type for easy reading. The pictures illustrate the text in a clear related pattern.

Primary

Glenn, Harold. Exploring Power Mechanics. Illinois: Bennett, 1962. 140pp.

This book tells all about power--its history, fundamentals of electricity, parts of small engines, and a section on safety.

Teacher Reference

Goldstein, Rhoda. Tools of The Scientist. New Jersey: Prentice Hall, Inc., 1963. 65pp.

How the first telescope was discovered, the bathyscaphe, the geiger counter, the seismograph, the uses of space probe satellites, the atomic reactor and accelerator.

Intermediate

Hatcher, Charles. What Shape Is It? New York: Duell, Sloan & Pearce, 1963.

Using straight lines first, then circles to show the many things that can be made. Solids are explained next. The question-answer pages in the back would prove valuable to children.

Intermediate

Hatcher, Charles. What Size Is It? New York: Duell, Sloan & Pearce, 1966. 32pp.

A history of various measures and how man measures various things. Riddles and pictures to explain points.

Intermediate

Hunt, DeWitt. Shop Tools. New York: Van Nostrand, 1958. 252pp.

The author gives methods of tool and machine maintenance. Areas covered are sharpening, lubrication, and marking of tools.

Teacher Reference

Leavitt, Jerome. Tools for Building. Chicago: Children's Press, 1955. 45pp.

Presents fifteen of the most common hand tools children are most likely to want to use and understand. A clear sketch, along with some basic information on the use and care of each of the tools is presented.

Intermediate

Maintenance and Care of Hand Tools. War Department-Technical Manual TM-867. Washington 25, D. C.: U.S. Government Printing Office, 1945. 116pp.

A manual prepared for the express purpose of training army personnel to be familiar with the use and care of hand tools. The novice, and even the experienced craftsman, will find this manual helpful in understanding most common hand tools. It is written in easy-to-understand, non-technical language, while using many illustrations to make descriptions more meaningful.

Teacher Reference

Moore, William and Robert Cynar. Fun with Tools. New York: Random House, 1957. 63pp.

The author presents some of the common wood-working hand tools in a clear, easy to understand way, using many illustrations to help the student see quickly the proper technique for tool use. Enough information is given for safe and successful use, but not too much to cause the reader to lose interest. Following the section on tools, creations from wood are suggested giving materials, plans, and a procedure to follow.

Upper

Moore, William. How Fast, How Far, How Much? New York: G. P. Putnam's Sons, 1966. 128pp.

The author explains how human speed is measured, how scientists measure depth of the earth, and how they measure the age and weight of things. There are explanations of how television, radio, radar, etc. are used to measure. There is a chapter of projects that can be ma

Reid, Maurice H. How to use Hand Tools. New York: Thomas Y. Crowell Co., 1952. 306pp.

The main purpose of this book is to explain basic principles of many of our common hand tools and to show how to use them. Although a little too involved for elementary children, the teacher will find these chapters profitable when interested in more than just the names of the tools. Many illustrations are used to help make meanings more clear.

Teacher Reference

Stanley Tool Guide. New Britain: Stanley Tools, Educational Dept., 1952. 40pp.

A booklet made up of thirty-eight charts presenting some valuable information about some of the common hand tools, many of which are used in the elementary school. Each page is perforated for easy removal and has three holes punched in it for quick insertion in a notebook. It would make a fine reference for an intermediate elementary school child or older and because the cost of this booklet is so low, could be added to his personal collection of materials.

Teacher Reference

Thurber, Walter A. Tools for Pounding and Cutting. Cornell University. Ithaca: New York State College of Agriculture, 1944.

Helpful in a study of some of the common tools -- adapted to use in elementary grades.

Teacher Reference

Tippett, James S. Tools for Andy. New York: Abingdon-Cokesbury Press, 1951. 48pp.

A story about some of the common hand tools that are normally found about the house. Provides an excellent means for instilling interest and introducing these tools for use at the workbench.

Primary/Intermediate

Toliver, Raymond. Care and Use of Hand Tools. New York: Wiley, 1944. 93pp.

This is an elementary manual that describes and illustrates the handling of common tools used in machine shops.

Intermediate

Wellman, William R., The Home Workshop. New York: D. Van Nostrand Company, Inc., 1953. 248pp.

Generally a little advanced for elementary school use, although chapter 6 does a fine job in discussing the selection and care of many of the common hand tools that would be used in the elementary grades.

Teacher Reference

TRAINS

Burleigh, David Robert. How Engines Talk. New York: Follett, 1961. 31pp.

This book contains accurate information that will increase the interest of the children. They learn about the messages of train whistles from the engineer to other workers on the train, as well as warning signals to people and animals along the track.

Primary

Elting, Mary. Trains At Work. New York: Harvey House, Inc., 1962. 83pp.

Story of trains and how they are used.

Primary

Gramatky, Hardie. Homer And The Circus Train. New York: Putnam, 1957. 60pp.

This is the story of a lonely red caboose who saves the circus animals when the engine breaks down and gets new prestige with a permanent job as the circus caboose.

Primary

Hamilton, Franklin. First Book of Trains. New York: Franklin Watts, Inc., 1956.

This story tells about three types of trains, passenger, freight, and work trains. Purposes of each type given in full detail. Also, railroad terms and signals, also duties of employees of the railroad. Pictures in color.

Intermediate

Harvey, Derek. Monorails. New York: Putnam, 1965. 94pp.

A history of the monorail is presented along with its present and future uses.

Upper

Hogeboom, Amy. Trains and How to Draw Them. New York: The Vanguard Press, Inc., 1953. 41pp.

This book is one of a series on how to draw many different things. Probably most useful to intermediate elementary school children and older. Easy to follow instructions and simple illustrations on how to draw each of the important cars and locomotives that would comprise a train. Along with this, the author includes a page of interesting and useful information about each of the train units.

Upper

Hubbard, Freeman. Great Trains of All Times. New York: Grosset & Dunlap, 1962. 155pp.

Book includes stories of famous trains and a short history of trains in the U.S. and in trains around the world. It also includes special jobs that trains have done. Wonderful illustrations and nice size print.

Upper

Otto, Margaret. The Little Old Train. New York: Alfred A. Knopf, 1960. 15pp

This delightful story is about a train which had to stop in the middle of its run because a cow has laid across the tracks. It describes the passengers and their problems about having to get where they are going, and how they get the cow off the track. Excellent for oral reading. Good illustrations.

Intermediate

Slobodkin, Louis. Clear The Track For Michael's Magic Train. New York: Macmillan Company, 1966. 44pp.

A delightful story written in poetry form about the wonderful imagination of a little boy on a train who pretends to be all the workers on the train and where it goes. Very good for reading aloud.

Primary

Zaffo, George. Big Book of Real Trains. New York: Grosset & Dunlap, 1949. 26pp.

Full page pictures compleme e simple descriptions of different types of cars on a train.

Primary

TRANSPORTATION & NAVIGATION

Bechdolt, Jack. Going Up. New York: Abington, 1948. 128pp.

An unusual book telling the history of vertical transportation in easy-to nderstand terms. It goes from ladders to airplanes.

Intermediate

Cleary, Beverly. The Mouse And The Motorcycle. New York: William Morrow & Company, 1956. 159pp.

Keith makes friends with Ralph, a mouse, who rode Keith's toy motorcycle in and out of numerous adventures.

Intermediate

Dines, Glen. The Fabulous Flying Bicycle. New York: Macmillan Company, 1960. 163pp.

Gerald Barnes invents a flying bicycle to escape the crowded streets of the town.

Intermedi

Gramatky, Hardie. Hercules. New York: Putnam's Sons, 1940. 76pp.

Hercules, an old fashioned fire engine is replaced by a new, more powerful one. When the new fire engines break down, Hercules dashes to the fire and saves the Mayor.

Primary

Helman, Hal. Navigation: Land, Sea & Sky. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966. 72pp.

This book describes the development of navigation, explaining the origin of certain technical words and instruments in such a way that grades 3 to 8 could understand. The pictures and diagrams are blue, white, and black; print is large. There

is an index of terms in the end. This book is simple to understand and technical enough to help in science and social studies.

Intermediate

Lewellen, John. You And Transportation. Chicago, Illinois: Children's Press, 1965. 63pp.

A dramatic and often humorous account of the growth of cargo transportation from early pack trails and waterways to rails, roads, and skyways.

The story of the United States as it grows from a fringe of colonies to one of the biggest and most productive nations in the world. Units include boats, trains, trucks, cargo planes, and pipelines. Illustrated.

Intermediate

Merrill, Jean. The Pushcart War. New York: William R. Scott, Inc., 1964. 223pp.

A fiction about pushcart peddlers, trucks, and taxis in New York who compete for priority of the streets. Pushcarts were first constructed and sold to people interested in selling food and various items from door to door.

Upper

Posell, Elsa Z. The True Book of Transportation. Chicago, Illinois: Children's Press, 1957. 47pp.

Large print and pictures on every page in either red or yellow. This is a primary history of transportation with comparisons of new and better methods. It discusses all methods of traveling on land, sea, and air. Good motivation for moving into other fields in more detail.

Primary/Intermediate

Stevens, Leonard A. The Trucks That Haul By Night. New York: Thomas J. Crowell Company, 1966.

This is a story about trucks that carry freight over highways. It tells of the responsibilities of the driver and explains the complete trip. Illustrations in black and white. Print is good.

Intermediate

Yates, Raymond. Faster and Faster. New York: Harper, 1956. 139pp.

This is the story of speed. It progresses from human speed, birds, bullets, and jets into the space age.

Upper

Zimnik, Reiner. The Be. On The Motorcycle. New York: Atheneum, 1963. 22pp.

The motorcycle riding be: becomes disallusioned when someone laughs at his stupid trick of riding around in a circle, so he takes off for a ride through the city.

Primary

WHEELS

Buehr, Walter. Story of The Wheel. New York: Putnam, 1960.

This is a pictorial story of the wheel and how it changed our lives.

Primary

Clymer, Eleanor. Wheels. New York: Holt, Rinehart & Winston. 1965. 40pp.

History of man's most valuable inventions is traced from earliest beginnings to present day. Discusses archeological excavations and many illustrations to show the uses of the wheel.

Primary/Intermediate

Shapp, Martha. Let's Find Out About Wheels. New York: Franklin Watts, Inc., 1962. 41pp.

A book about wheels to help children understand the importance of wheels in modern living. Children learn that the wheel is basic to almost everything mechanical. Illustrated.

Intermediate

WOODWORKING & GENERAL SHOP

Adler, Irving & Ruth. Tree Products. New York: John Day Company, Inc., 1967. 48pp.

The authors show that trees can be both beautiful and useful. They are a source of many products: fruit, nuts, sap, lumber, charcoal, tar, cork, etc. Drawings are in two colors on almost every page.

Intermediate

Anderson, Arthur. Designer's Notebook. Illinois: McKnight, 1966. 228pp.

The purpose of this book is to make you more aware of the elements and principles of industrial design so that you can apply your knowledge to the design of your project.

Teacher Reference

Bassett, K. T. The Pleasure of Woodworking. New York: Simon & Schuster, Inc., 1954.

Simple, understandable explanation of basic tools, woods, and joining materials (screws, nails, glue, etc.). Book also explains use of more involved tools (power tools) which may be of help for persons interested in making toys and furniture for home or nursery school.

Upper/Teacher Reference

Bauer, Carlton General Shop I. New York: Bruce, 1959. 251pp.

By learning to make interesting projects, you learn skills of drawing, planning, size, assembly lines, layout, and use of tools.

Teacher Reference

Capron, J Hugh. Wood Laminating. Illinois: McKnight, 1963. 94pp.

Wood laminating consists of gluing parallel-grained layers of wood together so that the new wood has more strength. The book tells about laminated wood products, how they are made, and projects that children can make.

Teacher Reference

Clemons, Frank. Practical Woodworking Projects for Today. New York: Bruce, 1957. 91pp.

Thirty-five attractive items are presented for the wood maker to make. Excellent photographs and sketches show how to bring the projects to completion.

Upper

Endicott, Robert F. Scrap Wood Fun for Kids. New York: Association Press, 1961. 223pp.

Part I of this book presents some fine background information dealing with selecting a project, material and equipment, shop techniques and some necessary finishing touches, leaving part II to present one hundred ready-to-use patterns and easy-to-understand instructions for children of elementary age. The projects were tested by children and could provide many hours of learning with easy-to-make wood projects for home, school, or camp.

Upper/Teacher Reference

Feirer, John. I.A. Bench Woodworking. Illinois: Bennett, 1959. 208pp.

This book teaches about the woodworking industry, including sources of lumber, how lumber is made into plywood, and how wood projects are designed and produced.

Teacher Reference

Feirer, John. Industrial Arts Woodworking. Illinois: Bennett, 1965. 432pp.

Fundamental processes in hand woodworking is described with stress on student participation in shop activities. Complete information about tools, materials, and ways to use them is illustrated well with diagrams and photographs.

Teacher Reference

Fryklund, Verne. Bench Woodworking. Illinois: McKnight, 1955. 152pp.

Information on basic woodworking operations, a number of problems, and important technical information make this book a good course in the fundamentals of woodworking.

Teacher Reference

Fryklund, Verne C. and Armand J. LaBerge. General Shop Woodworking, Bloomington, Illinois: McKnight and McKnight, 1955. 152pp.

A text that is very general in scope and could furnish much information to the elementary school teacher on woods, tools, care of tools and materials, as well as techniques of woodworking. The book is well illustrated and written in non-technical language that could easily be understood by the newcomer in this area.

Teacher Reference

Gottshall, Frank. Woodwork for the Beginner. New York: Bruce, 1952. 139pp.

Easy-to-make woodworking projects for the beginner are diagrammed thoroughly. There is little or nothing left to guesswork.

Upper

Groneman, Chris H. and John L. Feirer. General Shop. Chicago: McGraw-Hill Book Co., Inc., 1956. 342pp.

This book is written for an industrial arts general shop program in junior or senior high school. It contains much general information on such industrial arts areas as drawing and planning, woodworking, metalworking, electricity, plastics, leathercrafts, home maintenance and ceramics. Elementary teachers will find section 2 especially helpful in that it presents a good list of woodworking tools, along with information on the care and use of these tools. This section is well illustrated and easy for the novice to understand.

Teacher Reference

Groneman, Chris H. General Woodworking. New York: McGraw-Hill, 1959. 326pp.

The author covers many interesting topics that are generally not given a place in woodworking: machine tools, upholstery, plywood construction, historical development, and design trends in furtniture.

Teach Reference

Hammond, James. Woodworking Technology. nois: McKnight, 1961. 411pp.

This is a technical and cultural tex bout the use and knowledge of tools, materials, processes mechanics, and design. The properties, characteristics, and uses of different types of wood.

Teacher Reference

Haws, Robert. Manufacturing In The School Shop. Chicago, Illinois: American Technical Society, 1960.

It consists of pertinent information about manufacturing and production methods.

Teacher Reference

Hellum, Amanda W. and Franklin H. Gottshall. You Can Whittle & Carve. New York: The Bruce Publishing Co., 1942. 82pp.

A rather complete book on the art of whittling, describing the tools, techniques and woods necessary to master this most enjoyable pastime.

Upper/Teacher Reference

Hooper, John. Handcraft in Wood. New York: J B. Lippincott Co., 1953. 184pp.

The material presented is generally too advanced for elementary school use, although chapter 2 deals with the historical aspect of woodwork and chapter 3 with historic tools. In the study of primitive or early tools, either of these chapters would make good reference material.

Teacher Reference

Leavitt, Jerome. Carpentry For Children. New York: Sterling, 1959. 89pp.

Easy-to-follow directions and clear diagrams of 15 projects makes this an instructive and entertaining book for the reader.

Intermediate/Upper

Leeming, Joseph. Fun With Wood. Chicago, Illinois: Spenser, 1942. 111pp.

This is a book about whittling and carving wood. There are many diagrams to illustrate the making of useful gifts.

Intermediate

Lewis, Roger. Woodworking. New York: Knopf, 1952. 44pp.

The main topic is the care and use of tools, but the author includes a number of projects to make.

Upper

Lincoln, Martha. A Workshop Of Your Own. New York: Houghton-Mifflin, 1955. 214pp.

This book reveals the problems of setting up a workshop plus many ideas for activities.

Upper

McGinnis, Harry and M. J. Ruley. Basic Woodwork Projects. Bloomington: McKnight & McKnight Publishing Company, 1959. 149pp.

Assistance for beginners in selecting possible woodworking projects. Many of the projects listed could easily be made by intermediate or upper elementary school children. Each of the sixty-eight projects has a working drawing, accompanied by a picture of the finished product. A complete procedure is not given, although the materials used are listed, with a short paragraph or two of helpful hints for construction.

Intermediate/Upper

Miller, John. General Shop II. New York: Bruce, 1962. 292pp.

Directions and diagrams are given for the construction of wood, metal, electric, graphic arts, ceramics, leather, and plastic projects. There is a glossary for each unit.

Teacher Reference

Mix, Floyd M. 103 Easy Jig Saw Porjects. Chicago: The Goodheart-Wilcox Company, Inc., 1959. 80pp.

The elementary school teacher will find this an excellent idea book for small, simple-to-make wood projects. Each of the many projects include full size patterns, suggestions for decorating and as necessary, information on assembly. Detailed lists of materials and procedures are not emphasized.

Intermediate/Upper/Teacher Reference

Moore, William. Fun with Tools. New York: Random House, 1957. 64pp.

This is a general book about woodworking and includes many illustrated projects.

Intermediate/Upper

Newkirk, Louis V. General Shop for Everyone. Chicago: D. C. Heath and Company, 1952. 261pp.

More specifically written for the junior high school or the first year high school student. Could be most helpful to the elementary teacher as a general reference in the areas of drafting, woodworking, metalwork, electricity, and plastics.

Teacher Reference

Norling, Ernest and Jo. Pogo's House: The Story of Lumber. New York: Henry Holt and Company, 1941. 42pp.

A fine story about wood evolving from the need for a dog house. Such important steps as chopping down a tree, hauling cut logs to the saw mill, cutting logs into boards, and stacking lumber are included in this story.

Primary

Olson, Delmar. I.A. for the General Shop. New York: Prentice-Hall, 1954. 301pp.

The author acquaints the students with the basic materials, tools, machines, processes, occupations, and industries. Projects are described for the areas of industrial drawing, wood, metal, electrical, graphic arts, and ceramic industries.

Teacher Reference

Sibley, Hi. (editor) 95 Plywood Projects. Chicago: The Goodheart-Wilcox Company, Inc., 1960. 80pp.

A compilation of many drawings and plans for plywood projects, many of which contain full size patterns. Most of the projects presented could be made by children in the intermediate elementary grades; the remainder by children up through junior high school. No attempt is made to include information about materials or procedures.

Teacher Reference

Soderberg, George. Finishing Materials And Methods. Illinois: McKnight, 1959. 382pp.

Materials and methods of finishing types and processes are explained in a direct language with practical illustrations. It can be used to teach finishing and of painting and decorating in the vocational and industrial education classes at the high school level.

Teacher Reference

Sullivan, George. How Do They Make It? Philadelphia: Westminster Press, 1965. 139pp.

The author reveals the varied manufacturing processes used in the production of twenty food and household products. It also tells about the changes that have taken place in production.

Upper

Wolansky, William. Woodworking Fundamentals. New York: McGraw-Hill, 1962. 167pp.

This book should be useful to anyone who wishes to further his knowledge of materials, tools, machines, cabinet structures, furniture design, and finishing materials. It explains how to read and interpret drawings, illustrations, and printed material.

Teacher Reference

The American Council for Elementary School Industrial Arts is always interested in new members that are contributors or potential contributors to the cause of elementary school industrial arts.

Should you not be a member and wish to: make a contribution to the development of activity oriented programs in the elementary school through participation with professional educators similarly motivated; receive a "Newsletter" designed to share reports of current activities; participate in the annual national convention; receive reports of current research efforts, the following memberships are available at a very nominal annual fee.

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For further information write to:

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